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A STUDY TO EXPLORE THE ROLE AND FEASIBILITY OF A REGIONAL EDUCATIONAL COMMUNICATIONS CENTER

by

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Title VIIB
National Defense Education Act of 1958
Contract #OE-3-16-042

June 1964

The study herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.

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Plainview-Old Bethpage Public Schools
Plainview, New York

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FOREWORD

It seems fitting that a study of cooperative education among school districts should have been made possible by the cooperative action of many persons and organizations. Accordingly, I would like to take this opportunity to thank all of the people in school districts, in business and industry, and in government who have given of their time and knowledge to make this project a success.

I would particularly like to single out and thank the Board of Education of the Plainview-Old Bethpage, New York public schools for relieving me of my regular duties for a year so that this project might be pursued, and for agreeing to act as the legal agency for the handling of funds, a chore which is too often thankless.

Special thanks go also to the seven local superintendents who gave so much of their time, knowledge and thought to the project. It was their guidance that kept the project in focus and that insured its proper relationship to the very real needs of local districts.

I don't know whether it is more fitting to thank Mr. Lee Campion for his help or the New York State Education Department for sending him as its representative to this project. Suffice it to say that his help, encouragement and know-how were invaluable throughout the entire term of this project. I also want to express my appreciation to Dr. Robert Brown of the State Education Department for his assistance.

Dr. Gerald Torkelson deserves a special kudo as a fair, intelligent and extremely effective task master in his trying role as research coordinator for the Educational Media Branch of the U. S. Office of Education. Nor would it be fair to ignore the very real contributions of Dr. J. J. McPherson, head of the Demonstration Center of the U. S. Office of Education, in whose hands the physical model of this project will be placed. G. Ernest Anderson, Jr., David Crossman, John Dome, Leonard H. Freiser, Milton A. Gabrielson, Raymond Grai, Worthington Gregory, Jerrold E. Kemp, William H. King, David McLaren and Thomas Roberts all provided extensive help in developing the educational specifications for a regional communications center.

And finally, my appreciation to Paul Abramson, project editor, and a deep bow to Mrs. Grace Bass who took over and directed all the secretarial chores concerned with this project, and who brought order and clarity to what could have been chaos.

J. T.

6/30/64

CHAPTER I

OBJECTIVES OF THE PROJECT

Thousands of independent school systems -- controlled locally to solve local problems -- dot our map. This is our accepted and desired national pattern and though some efforts are being made to eliminate the very smallest of these districts through consolidation and annexation, * the great majority of operating school districts still house between 1,200 and 3,000 students.

A few districts -- especially those associated with great cities -- though geographically "local" have far larger student populations. Because of their great population, these districts are capable of supporting certain services that no smaller district could economically undertake. Examples of such services are special vocational schools, special schools for the gifted, sophisticated data processing installations and teacher training centers.

The object of this project is to explore the feasibility of groups of smaller, still independent, local districts banding together in joint ventures to support centers that could provide specified services, such as those now provided in part in the big cities.

A few decades ago, a concept of this type would not have been necessary. At that time, the function of the American educational system was to give all children--

(*From 1961 to 1963, the Office of Education reports the number of districts with fewer than 300 students declined from 24,538 to 19,509.)

especially those who were first-generation Americans -- a common heritage in America, and to provide them with three fundamental tools -- reading, writing and arithmetic.

When proficiency in the "Three R's" was the primary goal of our educational system, certain problems of education did not arise. For example, the cost of education was comparatively stable for every local district. The burden of providing the teachers, books, buildings and supplies necessary for this minimal teaching did not strain local budgets.

But the role of the schools has changed dramatically in the last 30 years -- and especially since the end of World War II. Reading, 'riting and'rithmetic are no longer the sole needed tools. Students must learn much more and the schools must provide more. Nor is it just in academics that the role of the school has grown. More and more our public schools are being called upon to provide other services -- adult education, counseling, recreation, psychological services, transportation, lunches, vocational training, to name just a few.

Moreover, America's position in the world has forced the development of new curriculums. A common American heritage is no longer enough. The students we are molding now will be citizens of the world to an extent we could not possibly have foreseen just a few short years ago. As a result, our schools have an obligation not just to teach each student the basic tools and heritage he must have to earn a living, but to offer to each student an opportunity to be educated to the maximum of his ability. To do this -- and to do it properly -- we must use every tool at our disposal. Many such tools can be made available only through cooperation among groups of independent local districts.

(It should be noted that this project is not in any way seen as a forerunner to the elimination of local districts or local control. It accepts the fact that local areas -- or districts -- are entitled to spend their money in the way they see fit, just as each family chooses how it will spend its money. Yet as families, we pay certain taxes to support services we desire -- garbage collection, police protection, foreign representation. In much the same way local districts would be taxed so that services they desired could be provided for them. Each local district would determine exactly how, when and how often it wanted to use these services.)

Such cooperation is not new in the world, in America or in education. And, as shall be shown later, the idea is not entirely unused today. The uniqueness of this study lies in its consideration of a whole variety of seemingly unconnected areas for cooperation, and in its proposal for a single formal organization -- and facility -- to provide the needed services.

From the days of the ancient Mesopotamian civilizations, man has found cooperation a handy tool for accomplishing what could not be accomplished alone. Our own nation was born as a result of the cooperative action of a group of 13 independent colonies, united for the common good.

Education itself abounds with examples of cooperation. Consider such examples as "sending" and "receiving" districts; sharing of specialized teacher talents; cooperative purchasing; visiting nurses; the establishment of special schools and classes to serve the needs of handicapped children; or joint park-school construction agreed to by city and school governments.

For the most part, however, these have been marriages of convenience --

often informal -- and seldom the basis for further concerted action. And yet, as the problems of education grow larger and more complex, it becomes obvious that greater avenues of cooperation among districts must be found.

Focus on the Curriculum

Cooperative purchasing, the pooling of specialized functions, school-park cooperation are all good and important. But schools are in business for one purpose -- to provide the best possible education for the children of their communities. To be really important, any cooperative action among districts must in some way fall into the area of curriculum.

Although schools spend a great deal of money (more than $22.5 billion was spent in the 1963-64 school year by public elementary and secondary schools, alone*) almost none of it is spent on research. Industry -- especially those industries that, like the schools, are on the cutting edge of civilization's needs -- spends upwards of 6% of its funds for research. Schools, on the average, spend less than 1/10th of 1% on the development of new and better techniques, curriculums, ideas and methods.

A large city school system, spending even this small amount, can purchase services and materials needed to perform efficient research. (For the Baltimore City Schools, for example, 1% of the annual budget would provide $80,122.60 for research -- as much as the total budget of some smaller districts. Actually the big city districts, in general, divert a greater percentage of their funds to research.) These districts can hire the specialized staff, acquire the necessary machines and seek the best advice

*School Management Magazine, January 1964.

for as long as is necessary to accomplish a research project. Moreover, they can carry on several research projects at once and, on occasion, they can fail, a luxury not available to smaller districts where each dollar is more closely watched by the electorate.

A regional educational communications center, the feasibility of which is under study here, would have as one of its primary jobs the conduct of research in the field of education for, and at the direction of, the individual member districts. Because it would receive contributions from each of the individual districts, it could raise the funds necessary to carry on proper and extensive research studies.

But research is not an end in itself. A great deal of theoretical research is being done right now by colleges and universities, federal and state governments and a large number of interested foundations. It is likely that an educational communications center would do some research on its own, but, as conceived, it would be much more directly involved in taking research that had been done previously and seeing how said research could be applied to actual local situations.

Applying the Research

This step -- between pure research and practical application -- is the one that is least often successfully managed by independent school districts. The great majority of districts -- even many of those that are famed for their educational experimentation -- are forced to use the "cut and paste" method of curriculum development.

Under this system, a committee is formed to work on a new curriculum after school or perhaps for two or three weeks in the summer. Its members "study

the research," meet on occasion with experts in the field, cut and paste together what they have seen and read and "presto-chango' a new curriculum is born.

This "curriculum" now becomes district policy. It's put into effect. Teachers must use it, must test it in their classrooms. If it works (and that's difficult since there has been little depth study of the project and almost no adequate explanation of its goals and methods) all is well. If, after two or three years, it fails, it is discarded, the old curriculum is resurrected and a new committee is formed to cut and paste in the same area or a different one.

No district is satisfied with this approach to curriculum development and change. But the limitations of size -- and of money -- make it necessary. Few districts can work on more than one curriculum at a time. And what work they can do must, by its very nature, be less professional than it ought to be.

A regional educational communications center could serve to solve some of these problems. Because of its greater size -- representing a great number of districts, not just one -- it could afford the staff and time necessary to develop and try out new curriculum ideas. It could hire professional people to devote full time to studying new ideas, writing them up, and experimenting with them.

As conceived, a regional center would be equipped to run pilot programs under laboratory conditions. It could bring students into the center and test programs. It could go out to the districts themselves and test the programs in classroom situations. Most important of all, it could maintain itself in the forefront of educational research and curriculum development in many diverse fields.

Training Personnel

Research and curriculum development would be two of the important roles an educational communications center would take. Helping to train and upgrade teachers -- and as a result to improve the schooling of children -- would be another vital area in which it could function effectively.

Too often, new curriculums are simply pieces of paper read -- and ignored -- by the majority of teachers. For the most part, this is not a deliberate refusal to change. It is the result of the failure of districts to properly educate their own teachers -- to hold intensive training sessions, to explain the ideas behind the new methods, to show the tools and to outline the results. Effective change takes place when the right atmosphere is created, when there is a momentum for change in the district. A regional communications center would be a device to help create that atmosphere and momentum.

It must be emphasized here that, in all areas, the work of such a center would be prescribed by the independent districts. In no case would the center dictate to its member districts. Its curriculum and training work would be at the behest of the independent districts and the results of its work would be accepted or rejected locally. The center would be in a position to help each district to move ahead as quickly as it wanted, without the need for duplicating the efforts of others. And it could move ahead on all fronts at one and the same time.

Communications

As its name implies, one of the vital functions of a regional communications center would be to provide a means for increasing communications among districts.

This is one of the serious problems now facing American education. Much

that is being tried in one district is being duplicated independently in others because none of the districts are really aware of what the others are accomplishing. Particularly in the area of experimental work, communications between districts are minimal.

Not only are communications difficult to establish, they are frequently deliberately disrupted by the fallacious and dangerous idea that there must be competition between districts, that when a new approach is made to a problem in District A, District B must find a different solution in order to show independent leadership in this area. Such cut-throat competition has no place in schools where the real primary concern is the better education of all students.

A regional educational communications center would use many means to break down this lack of communications. It would use conventional facilities, such as newsletters, pamphlets, brochures and other printed matter, all produced on the center's own facilities (with much of the production done,quite possibly, by vocationally oriented students from the member districts). In addition, it would take advantage of all the newer media -- television, films, filmstrips, projectuals and tapes, among others -- to create an atmosphere of complete and total communications among member districts and, it is hoped, with members of other regional centers wherever they may be. Perhaps most important, it would be a center to which teachers and other personnel from the participating districts would be attracted -- a center to which they would come in order to experiment, to work and to exchange ideas.

Operational Functions

As conceived, a regional educational communications center would also have certain operational functions in relation to its member districts. For example, it would

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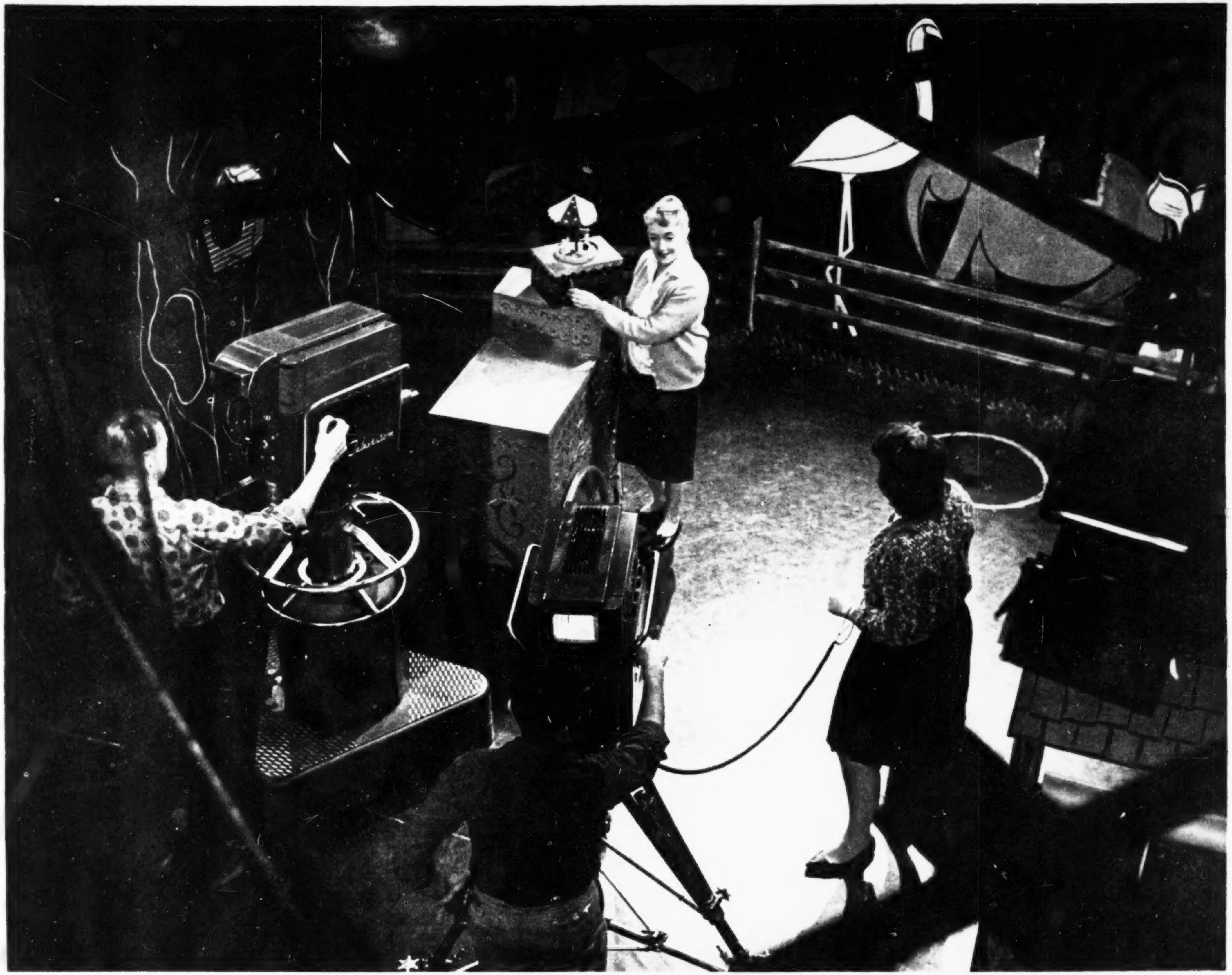

most probably operate a data processing center for the districts -- utilizing equipment and personnel that no one district could afford.

The center might also be the employer of technical experts in a variety of fields who would be on call for the use of member districts. For example, the center's publications bureau would be manned by experts in the publishing field, capable of aiding each district as well as disseminating the results of the center's activities.

A regional communications center could house and distribute audio-visual materials (films, book, filmstrips, projectuals) for its member districts and could conceivably provide a major production center for the use of district personnel -- as well as a training center so that each district could develop its own independent program.

Where local conditions and needs dictate, many other services might be undertaken by a regional center. Among the services that have been attempted in various parts of the nation are:

The establishment of vocational or technical schools in areas where the great majority of students go on to college and where the number of non-college students in any one district would be too small to offer a proper range of educational work.

Programs to retrieve and rehabilitate dropouts. It could be the central administrative agency for conducting work-study programs for each of the member districts.

Cooperative purchasing under the direction of a professional purchasing agent who would develop areas for cooperative bidding and then supplement the staffs

526
521
233
379

of the local districts in arranging for bids and for the receipt of the goods ordered.

Transportation. A transportation director could conceivably handle many of the chores now put on the shoulders of superintendents, assistant superintendents and business managers. In some areas, a regional center of this type might actually handle all transportation for member districts. On a more limited scale, the center would probably get involved in the busing of special students but would otherwise serve in a consultant capacity to the member districts.

Psychological and medical services, including testing; major maintenance involving the services of skilled workmen; central feeding for districts desiring this service, administrative training; placement and direction of student teachers; and recruiting of new personnel are other areas into which such a center could move. Actually the list is endless, being limited only by the ingenuity and desire of the participating districts.

What's Available

In one form or another, many of these services are now being provided by independent school districts or cooperatively by school districts in various parts of the nation. They are being provided to lesser or greater degrees, more and less successfully and under a bewildering assortment of legal and extra-legal structures. It was the purpose of this year of study to examine those current operations that seemed to have most promise, to examine the areas in which they are functioning, to determine their staffing needs, costs and problems, and to propose ways and means for bringing the best of what is being done in scattered parts of the nation into a single comprehensive pattern.

CHAPTER II

METHODOLOGY

There have been studies made to determine the feasibility of regional educational media research organizations by Pennsylvania State University[1] and the Oregon State Department of Education.[2] Both of these studies came to the conclusion that these centers are both feasible and necessary, and that the rapidly developing technology of education which so importantly involves media and materials should be strongly supported.

Research has already established the effectiveness of television in the in-service training of teachers. In his study "Television and Teacher Education,"[3] Thomas D. Clemens pointed out that evidence indicates that television observation before in-service observation is significantly more effective than television observation only, in-person observation only, or television observation after in-person observation. These findings were borne out by Glasgow[4] and Keller[5] in their later related studies.

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[1] "A Research Report on Operational Plans for Developing Regional Educational Media Research Centers"- Pennsylvania State University Division of Academic Research and Services, April 1962 (USOE Title VII Project No. C-1058).

[2] "A Research Project to Identify the Need For and Feasibility Of Regional Educational Media Research Organizations with Regional Improvement Orientation"-National Planning Commission of the Council of Chief State School Officers and the Oregon State Department of Education, April 1962 (USOE Title VII Project No. C-1057).

[3] Clemens, Thomas D., "Television and Teacher Education" - San Jose State College, 1956.

[4] Glasgow, M. W., "A Study of the Relative Effectiveness of Selected Approaches to the In-Service Education of Teachers in the Utilization of In-School Radio and Television Broadcasts" - Extension Division, University of Oklahoma (USOE Title VII Project No. 253).

[5] Keller, Robert J., "Closed Circuit Television in Teacher Education" - University of Minnesota, 1957.

Additional research in this field was carried out by Ramsey[1] and Tauber and Lilley.[2] The latter felt that necessary action should be taken to establish an educational media research information service in the U. S. Office of Education under the Media Branch.

Building from this information, the principal investigator had as his basic problems proving the feasibility of regional cooperation and establishing patterns for it.

To accomplish these, the principal investigator traveled throughout the United States to examine cooperative functions and to speak with the persons involved in them -- both at the local district level and in the cooperative office. Members of the advisory board also conducted selected visitations -- Drs. Savitt, Murphy and Bryan.

To insure the value of these visitations, materials were mailed in advance to the chief administrative officer of the cooperative unit. This material outlined the project and indicated those areas of cooperation in which the investigator was particularly interested.

The chief administrator was then asked to arrange interviews with all of the persons within his jurisdiction who could provide pertinent information concerning the workings of the cooperative district. In general, these were people involved in curriculum research, professional libraries, data processing, audiovisual activities, administration and continuing education.

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[1] Ramsey, Curtis P., "A Research Project for the Development of a Measure to Assess Attitudes Regarding the Uses of Newer Education Media" - December 1961 (USOE Title VII Project No. 492).

[2] Tauber, Maurice F., and Lilley, Oliver L., School of Library Service, Columbia University, "Feasibility Study Regarding the Establishment of an Educational Media Research Information Service" - May 1960 (USOE Title VIIB Project No. B-00A).

Similar visits were made to several large-city districts, each of which was providing the type of service a cooperative district might provide, even though only a single district organization was involved.

In making these visitations, the principal investigator was concerned primarily with observing seven functions of cooperation: types of organization (legal structure); the services rendered; personnel needed; space requirements (in terms of a building or buildings); equipment necessary to get the job done; financing; and problems recognized and identified by different cooperating groups.

The results of these visitations were shared with members of an eight-member advisory board, consisting of seven superintendents of local districts in Nassau County, New York, and a representative of the New York State Education Department.*

In January 1964, a meeting was held in New York City with representatives of the seven participating districts and with consultants in various possible areas of cooperation.** This was followed by a series of seven conferences among specialized personnel in the seven districts concerning how cooperation among districts (not necessarily their own) could improve their various services. (Summations of these conferences appear in the Appendix.)

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* School Superintendents Dr. Robert F. Savitt, Plainview, N.Y., Chairman; Dr. Charles H. Bryan, Bethpage, N.Y.; Dr. Thomas F. Carey, Jericho, N.Y.; Dr. Thomas F. Guilford, Farmingdale, N.Y.; Dr. Edward J. Murphy, Lynbrook, N.Y.; Dr. James F. Redmond, Syosset, N.Y.; Dr. Louis Rosasco, Glen Cove, N.Y.; and Mr. Lee E. Campion of the New York State Education Dept.

** Dr. Kenneth Bowers, San Diego, Calif. "County System"; Dr. William Emerson, Oakland County, Mich. "Intermediate District"; Dr. Nolan Estes, St. Louis, Mo. "Cooperative Services"; Mr. Dan S. Mewhort, Toronto, Canada "City System"; Mr. Erwin Tzinberg, Clayton, Mo. "Legal Aspects."

It was not the objective of this research to provide a model for cooperative services, though it is certainly hoped that one will and can be developed from it. The purpose was to establish the feasibility of cooperation among districts, to suggest new areas of possible cooperation and to delineate the facilities, equipment, personnel and legal enactments that would be necessary to make cooperation among districts workable.

On May 27th and 28th, 1964, a conference of experts was convened in Palo Alto, California to examine the feasibility of the regional cooperation observed and proposed by the principal investigator and to approve his concept of it. Serving as consultants were:

Dr. Amo DeBernardis, Asst. Supt. of Schools
Portland, Oregon

Mr. John Dome, Director of A-V Services
Miami University, Oxford, Ohio

Dr. Robert C. Gerletti, Director of A-V Education
Los Angeles County, California

Dr. Fred F. Harcleroad, President, California State College
Hayward, California

Dr. Armand Hunter, Director, Continuing Education Service
Michigan State University, East Lansing, Michigan

Dr. Jerrold E. Kemp, Director, A-V Service Center
San Jose State College, San Jose, California

Dr. Richard B. Lewis, Director, Division of A-V Services
San Jose State College, San Jose, California

Mr. Henry Ruark, Consultant, Instructional Materials
Oregon State Board of Education, Salem, Oregon

Members of the Staff of the School Planning Laboratory
Stanford University, Stanford, California

The material presented to them concerning present and future cooperation, along with the educational specifications and building plans they approved, make up the balance of this report.

CHAPTER III

COOPERATIVE ACTION THROUGHOUT THE NATION

Cooperation among school districts is neither unique nor unusual. But in most cases such cooperation has been for the accomplishment of one or two specified objectives (a film library, a special education program, a television station, etc.). In no cases have groups of individual, independent districts investigated and tackled the full range of services that would be possible.

In order to learn what kinds of services are being rendered cooperatively, how much they cost, what facilities and staff are needed and the legal structure upon which they are based, the principal investigator visited locations throughout the United States and Canada.*

No attempt was made to evaluate the quality of the services rendered in the various locations. Rather, the purpose of these visits was to establish the feasibility of cooperation among districts to specific ends.

The visitations were conducted during the Fall and Winter of 1963-64. At each location the principal investigator met and tape-recorded interviews with the director of the facility visited, with members of his staff and with representatives of districts involved in the cooperation. Observations from these visits follow.

*A visit was made to Toronto where a facility most closely resembling that proposed by the principal investigator was to be found.

OAKLAND COUNTY, MICHIGAN

Oakland County is an excellent example of the "intermediate district," a legal entity with full taxing powers that services districts within its jurisdiction. Although it is a county office, it does not have general supervisory powers over the local districts within its boundaries.

The Oakland County School District has a five-man elected school board. It is administered by a superintendent and business manager; has direct taxing powers (it levies taxes against real estate with the county, not, as in some later cases, against the participating districts); and it services 29 independent districts within its jurisdiction.

The County unit (which first came into being by act of the Michigan Legislature in 1962) has certain unique powers. As conceived, it functions in part as an arm of the state government. In this capacity it does have jurisdiction in such areas as fixing school boundaries, enforcing teacher licensing codes, and enforcement of state codes concerning lunches, transportation, tuition, uniform accounting, etc. These functions are performed by one of the county unit's three arms -- Administration of Law Enforcement.

A second "arm" of the county is concerned almost entirely with special education -- the training of handicapped children for the 29 independent districts. The county hires teachers, arranges curriculum and obtains space for these children. The local districts provide only the transportation.

The third major interest of the county is in the area of instructional services. Here it is most concerned with in-service training of teachers in each -- and all -- of the local districts.

The county office, through the superintendent, initiates curriculum studies by first determining the needs of local districts. A specialist is then hired on a consultant basis to develop a program and to work with teachers and administrators in the local districts. If the program shows signs of needing continuing work, the specialist is employed on a full-time basis by the county. Full-time employees are paid a salary equivalent to that of a full professor at any large midwestern university. At the present time the district employs full-time specialists in reading, language arts, social studies, science, mathematics, testing and guidance. It also operates a reading clinic for students with special problems.

Because of the immediate availability of film libraries housed at each of Michigan's state universities, the county does not have an AV or film library. It does, however, have an extensive professional library of texts, 30 standardized tests and professional literature, administered by a full-time librarian and an aide.

The county district also runs a data processing center in an air conditioned part of its building. This installation handles payroll, attendance and other functions for those districts that wish to participate. The data processing equipment has also been used to score 110,000 standardized tests for districts in the county.

A professional journalist is employed to prepare and disseminate written material concerning the district's operations but the actual job of producing brochures and pamphlets is done on a job basis by local printers.

The Oakland County School District expends about $281,000 annually, the largest part of that going for salaries of consultants and staff members. It is housed in its own building -- a structure which was purchased and to which additions have been built. Total cost of the facility itself is under $400,000 including three major additions.

Present indications are, however, that more space will be needed in a very short time.

Oakland Schools Budget 1963/64 - General Education Fund

Expenditure Budget by Line Item

Salaries	$219,375.40
Board Members per diem and Mileage	2,000.00
Travel Expense and Mileage Allowance	8,300.00
Professional Services	8,000.00
Membership Dues and Publications	500.00
Teaching Supplies and Expenses	4,000.00
Office Supplies and Expenses	7,000.00
Utilities	8,000.00
Telephone and Telegraph	8,000.00
Equipment Rental	200.00
Maintenance of Buildings and Grounds	1,000.00
Insurance	978.00
Employee Benefits	4,100.00
Fidelity Bonds	100.00
Printing and Duplicating	1,000.00
Total Expenditures	$280,953.40

Expenditure Budget by Program

Instruction	$120,506.37
Administration	81,800.51
Child Accounting	12,070.99
Transportation	13,997.88
Maintenance and Operation	25,600.00
Fixed Charges	5,178.00
School Lunch	11,799.65
Total Expenditures	$280,953.40

SAN DIEGO COUNTY, CALIFORNIA

The San Diego County School District is also an intermediate district but it has certain basic differences from the organization found in Michigan.

In California, education is a state function. State law establishes requirements and provides basic financial support.

Immediate control and responsibility for the operation of schools rest with the elected school board of the local district.

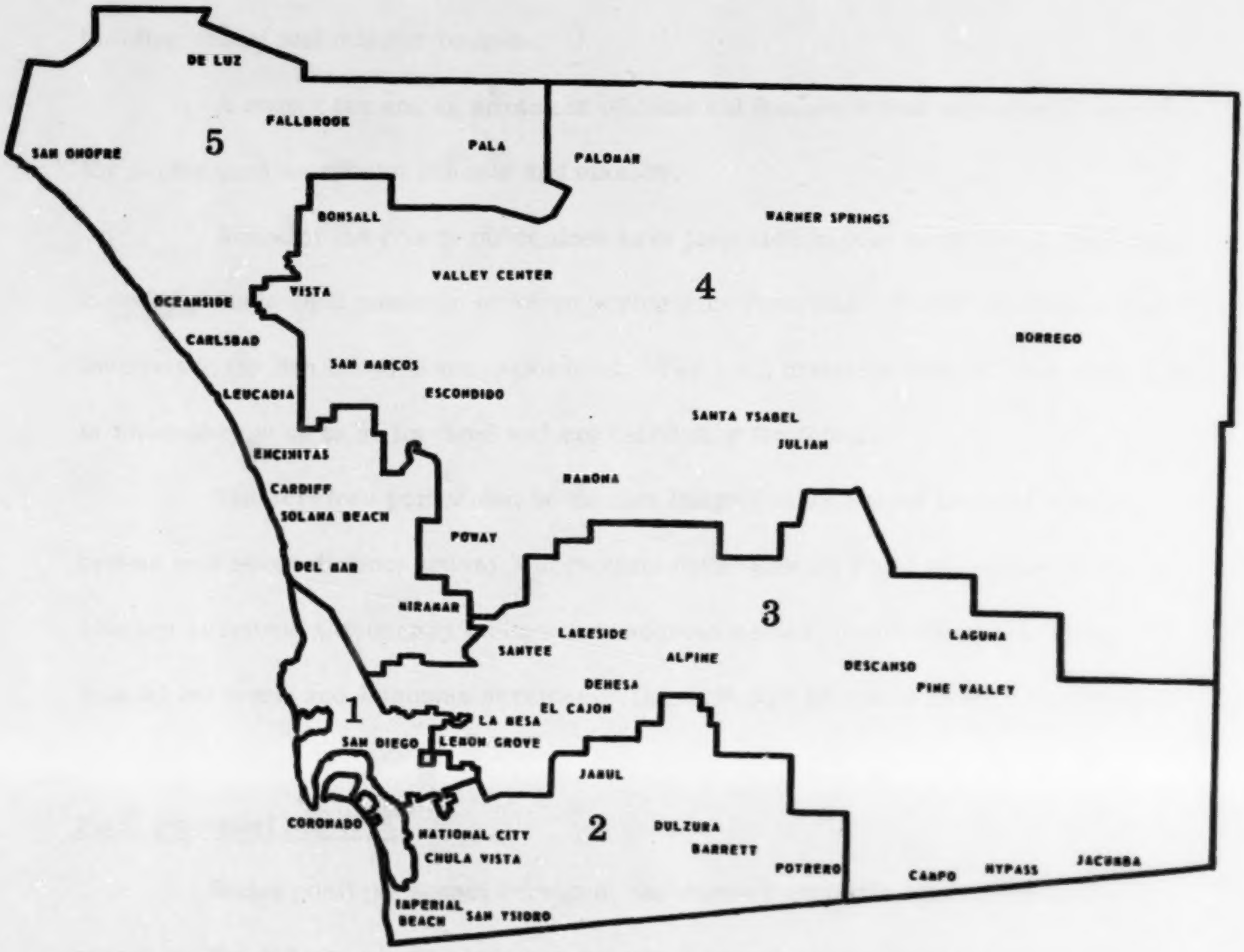
Between these two levels is the County Department of Education. This intermediate, administrative, and service unit has a dual purpose: to equalize educational opportunities for all children, which means making it possible for the smaller school districts to offer a program comparable in range and quality to that offered by the larger districts; and to encourage, to stimulate, to help all school districts see possibilities for improvement and to assist them with expert help and resources.

Prior to 1949, San Diego County board members were appointed by the County Board of Supervisors and the County Superintendent of Schools was elected by popular vote. A constitutional amendment and an enabling County Charter Amendment to reverse this practice were approved by the voters in 1946. In 1948, five board members were elected to take office in January of 1949.

The board consists of five elected members; one from each of five special districts (see map) for six-year terms set up on a staggered basis. They receive compensation, as determined by the County Board of Supervisors, for services and expenses incurred while performing official duties. The board appoints the county superintendent of schools who must be properly certificated by the State Department of Education.

State allocations supplemented by district funds through contractual arrangements finance services relating to the instructional program.

DEPARTMENT OF EDUCATION · SAN DIEGO COUNTY


DE LUZ
5
FALLBROOK
SAN ONOFRE
PALA
PALOMAR
BONSALL
WARNER SPRINGS
VALLEY CENTER
4
VISTA
OCEANSIDE
CARLSBAD
BORREGO
SAN MARCOS
LEUCADIA
ESCONDIDO
SANTA YSABEL
JULIAN
ENCINITAS
RAMONA
CARDIFF
SOLANA BEACH
POWAY
DEL MAR
3
MIRAMAR
LAKESIDE
SANTEE
ALPINE
LAGUNA
DESCANSO
PINE VALLEY
DEHESA
EL CAJON
1
LA MESA
SAN DIEGO
LEMON GROVE
JAMUL
CORONADO
NATIONAL CITY
2
DULZURA
BARRETT
CHULA VISTA
POTRERO
CAMPO
HYPASS
JACUMBA
IMPERIAL BEACH
SAN YSIDRO

A budget provided by the County Board of Supervisors finances services relating to processing of school district funds, contracts, teacher credentials, school building plans, and district budgets.

A county tax and an allotment of state aid finance direct educational services for pupils such as special schools and classes.

Although the county office does have jurisdiction over some local districts, it need not have such power in order to perform its functions. Fifty-two districts are involved in the San Diego County operation. The local districts choose those operations in which they wish to be involved and are taxed only for those.

The services performed by the San Diego County School District can be broken into seven distinct areas: Curriculum development; Pupil personnel services; Library services; Community education resources center; Audio-visual services; Special services; and Business services. The first five all come under a Curricular Services division.

Pupil personnel services

Under pupil personnel services, the district conducts special education programs for district whose needs are not great enough to cause them to establish local programs of their own. The county also conducts testing programs for the local districts and has guidance personnel to supplement local resources in this area. The county operates as a coordinating body between local districts and other community agencies in dealing with problems of employment, underpriviledged children, law enforcement and other areas impinging upon the work of other government and welfare agencies.

Library services

The county operates a library of better than 300,000 volumes designed as supplementary reading. Trucks transport volumes on a one-day basis to the local schools.

In addition to this student library, the county houses an extensive professional library, including periodicals, books, tests and texts. More than 11,000 professional books, 50,000 pamphlets, and subscriptions to 200 periodicals are contained in this part of the library. Materials from the curriculum library are available to local teachers and administrators on request.

Community education resource center

This unit of the county office was formed to develop resources for science and mathematics teaching in the local school districts. Basis of its operation is the tremendous difficulty all science teachers have in keeping current in their fields, and the availability within the county of a great number of business firms employing personnel and techniques on the "cutting edge" of scientific knowledge.

It is the task of the resource center to receive requests for aid from local districts, to determine what information is available, and to contact industry and others for the help that is needed. The center then collates the information, puts it into a usable form (usually making use of audio-visual techniques) and disseminates the information back to all of the participating districts.

Although it was formed originally to work in the areas of science and mathematics alone, it is expected to branch out into other areas as resources and time permit.

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Audio-visual services

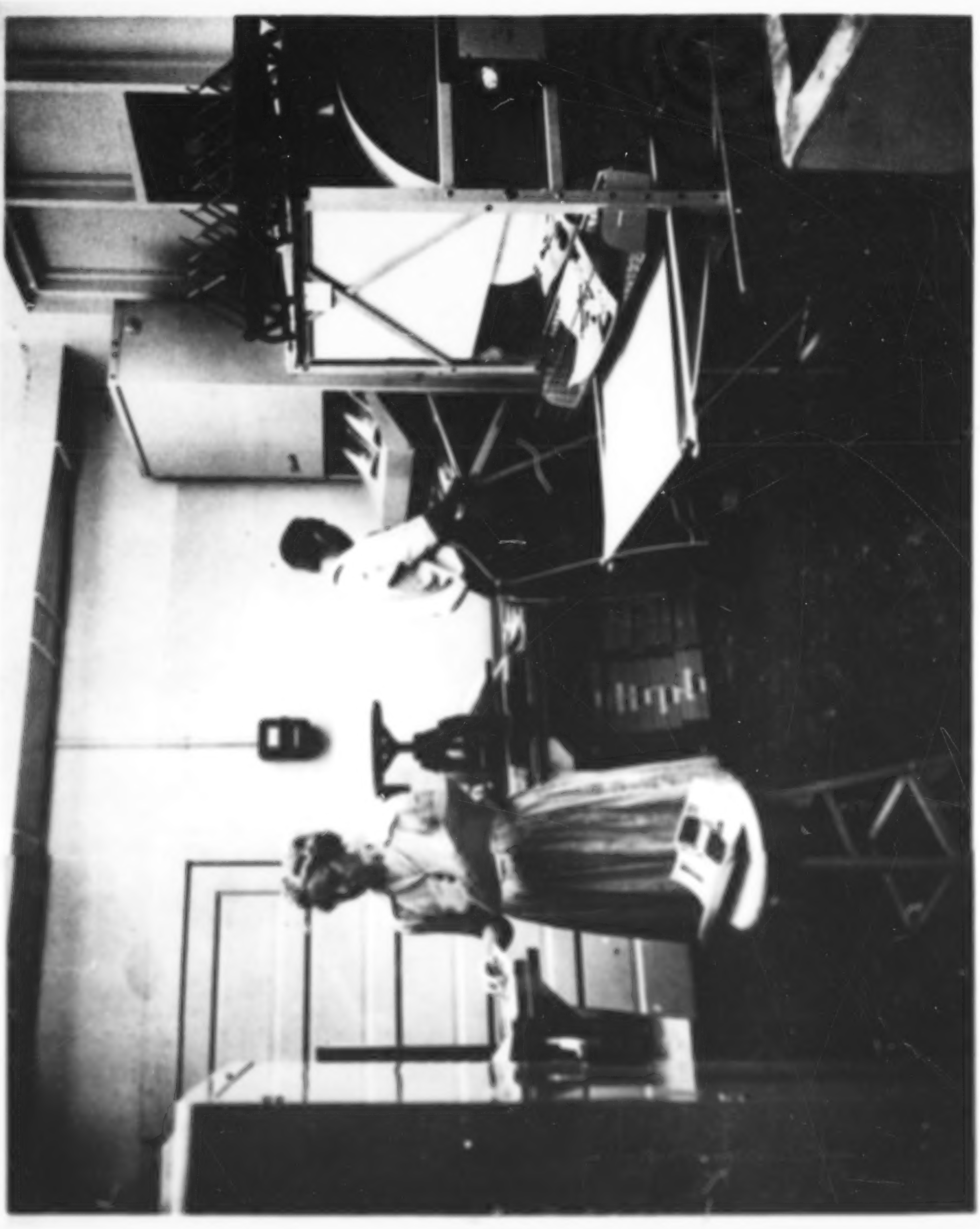
The audio-visual department serves as a lending library of tapes, films, filmstrips, records, art objects and other visual and audio teaching tools.

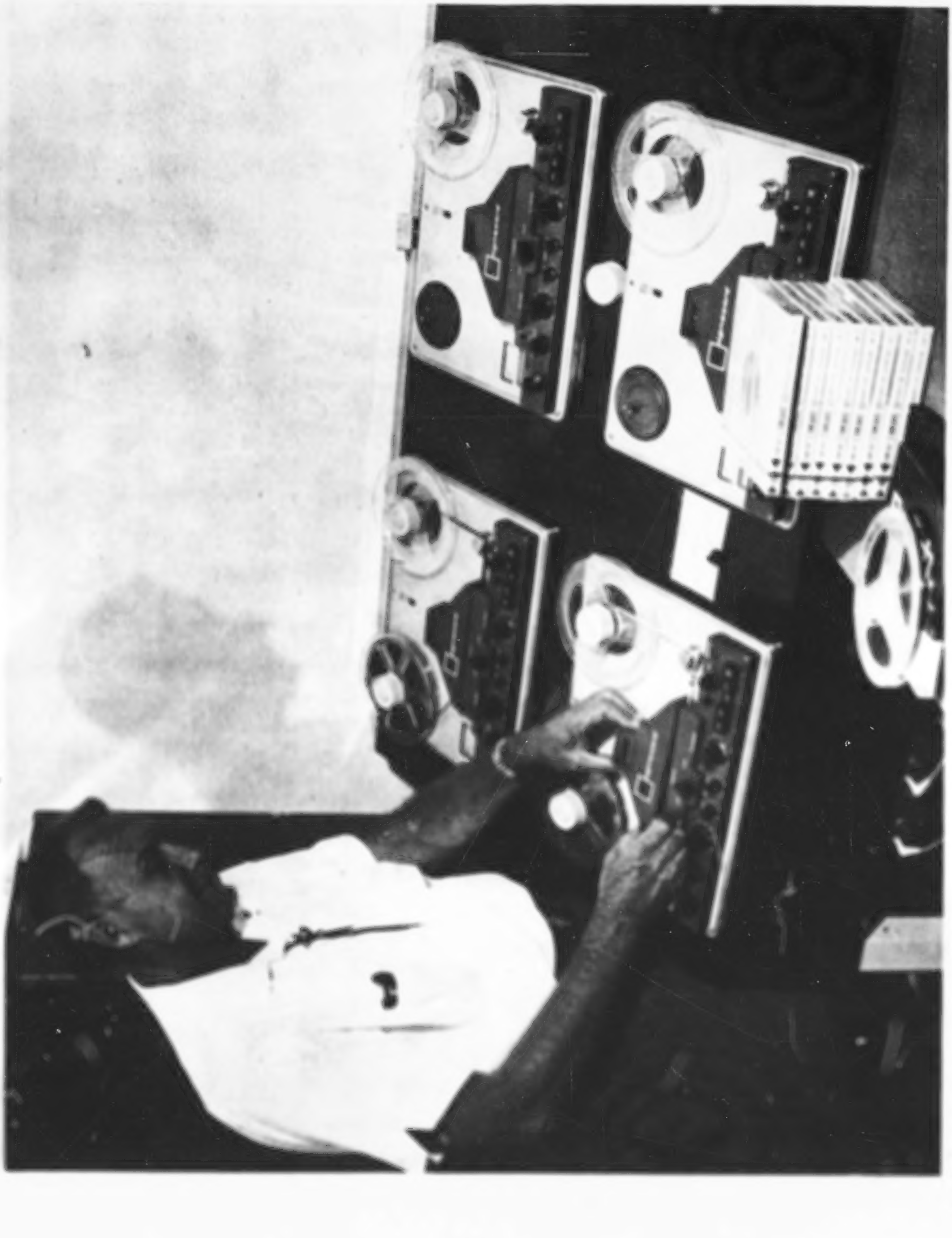
A three-man professional staff and 22 technicians, artists and other non-professional personnel are involved. The county has a library of better than 10,000 film prints (with almost 5,000 titles represented), 5,000 filmstrips, up to 1,500 disc recordings and an equal number of tapes. It is equipped to make tapes, films and recordings on request for the member districts.

Districts using the audio-visual service pay the county on the basis of $1.50 per ADA for unlimited film rental or contract on a straight rental basis, determined by the number of films or other items it borrows during the course of a year. (A common system calls for a rental of $3 for the first 50 titles borrowed, $2.50 for the next 50 and $2 a title beyond that.) Other services can also be purchased. (For example, the county AV office will duplicate a tape for $1.)

The three professionals on the staff are the chief administrator (who handles contacts with the local superintendents and is in charge of budget and administrative detail); the administrative assistant (who is charged with supervising the technical staff); and the audio-visual coordinator (who works with groups of teachers on better AV techniques and who evaluates the materials to be added to the collection).

The AV office operates five trucks, each of which makes three trips per week delivering materials to the local districts and returning them to the county office. The total value of the collection is placed at better than $1.5 million.





Special services

The special services division provides advisory, coordinative, and informational service to school districts, community groups, governmental agencies, legislators, educational associations, and the public.

Its teacher personnel service helps districts obtain qualified teachers by maintaining a central file of prospective teacher applications and references for district personnel officers, interviewing applicants, and making referrals to districts with vacancies.

Local school boards consult with special services on various problems, such as establishing criteria for selection of administrative personnel. In cooperation with the San Diego County School Boards Association, regional and county-wide meetings are held and informational materials prepared for board members.

Official reports required by state and federal law, such as pupil attendance reports, are compiled and forwarded. Statistical summaries and analyses are prepared for governmental agencies, legislators, educational associations, and groups studying the status of the county's schools.

Public information activities such as informational charts, reports, and news announcements are released to news media, parents, and educational groups to increase community understanding of the program of educational improvement.

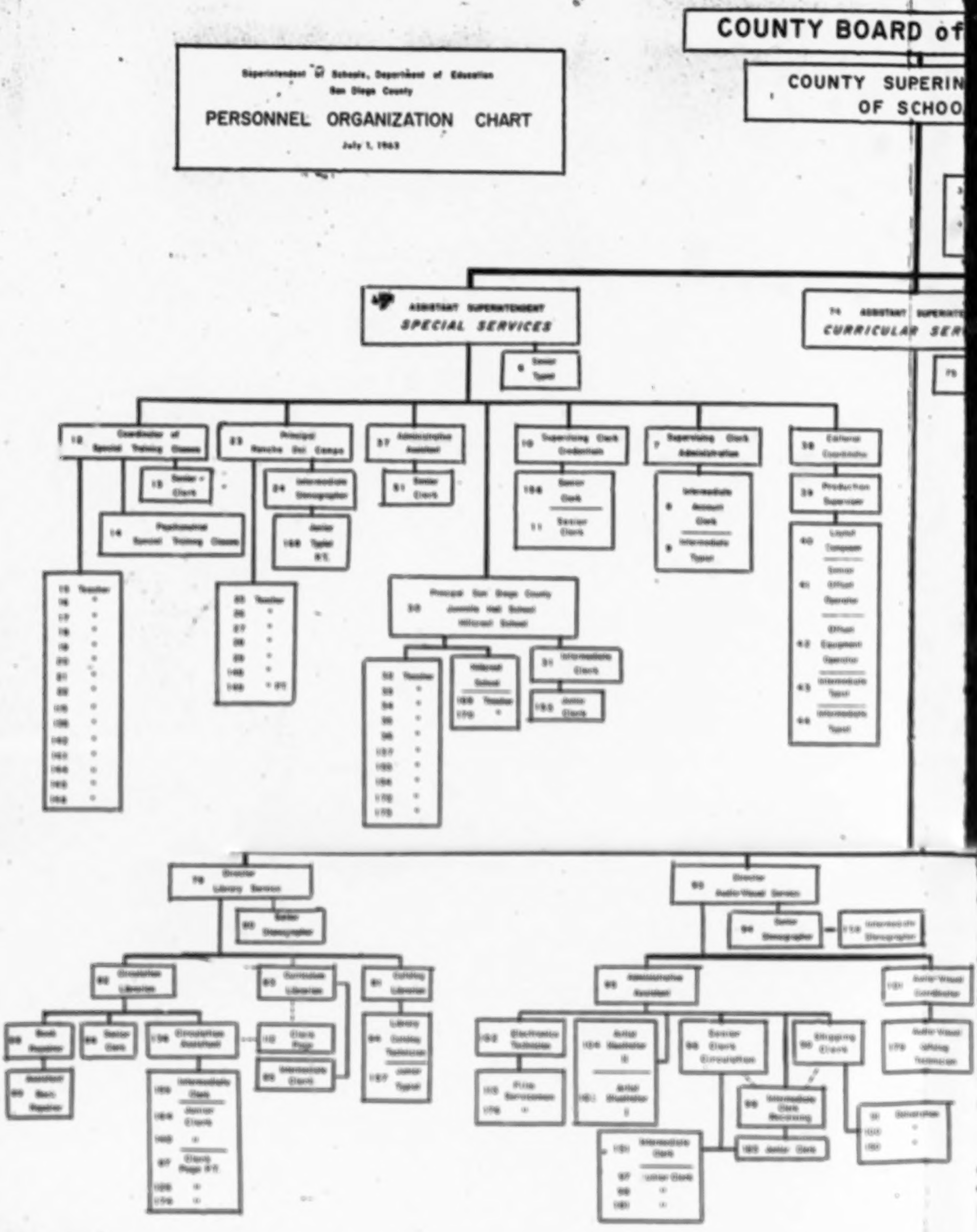
Special services operates special training classes for the mentally retarded. Staff members identify pupils and organize classes to service areas of the county where districts are not able to operate their own.

Special services prepares and distributes publications such as courses

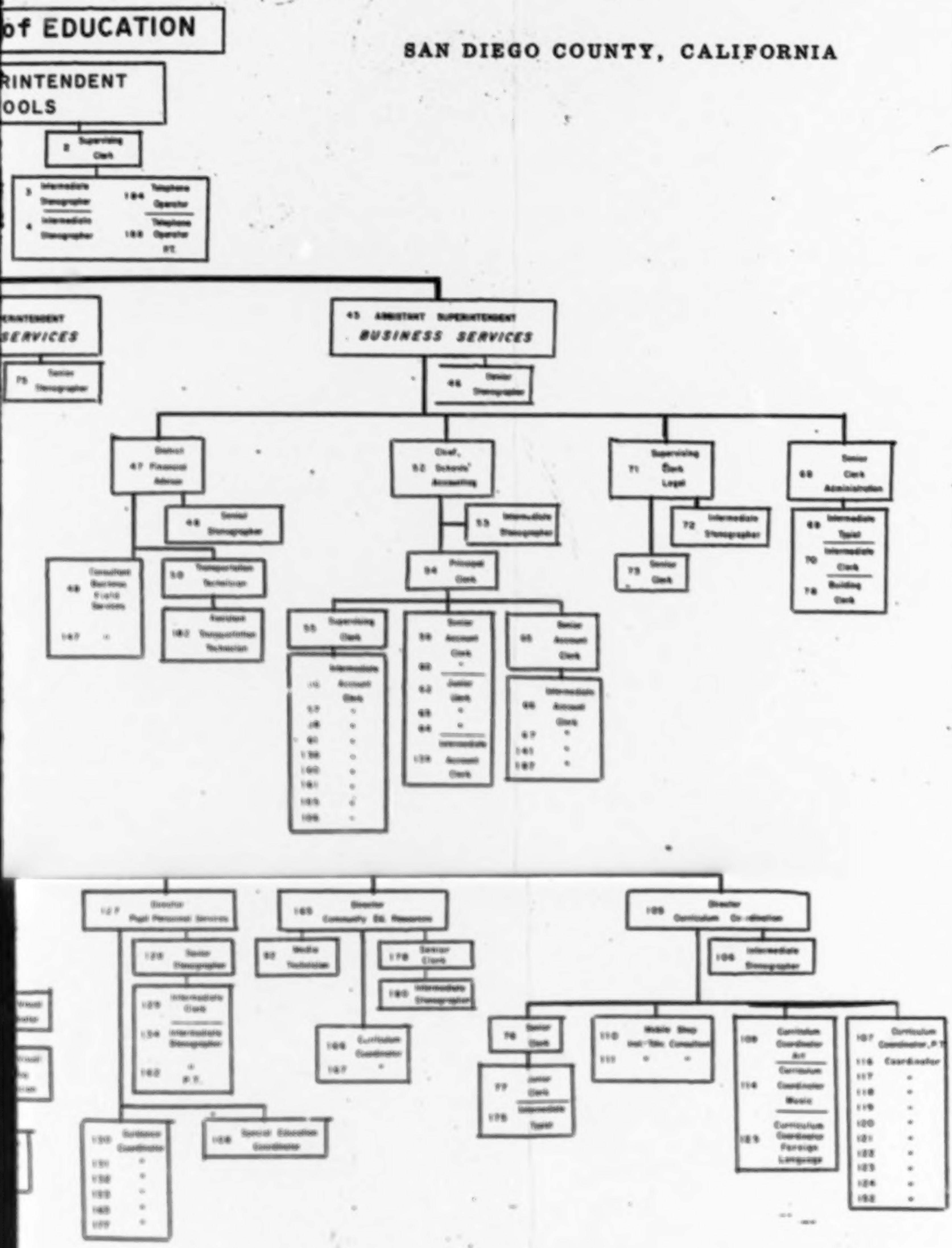
Superintendent of Schools, Department of Education
San Diego County

PERSONNEL ORGANIZATION CHART

July 1, 1963


COUNTY BOARD of
COUNTY SUPERIN
OF SCHOO
ASSISTANT SUPERINTENDENT
SPECIAL SERVICES
Senior Typist
74 ASSISTANT SUPERINTE
CURRICULAR SERV
Coordinator of Special Training Classes
Senior Clerk
Psychometrist Special Training Classes
Teacher
Principal Rancho Del Campo
Intermediate Stenographer
Junior Typist P.T.
Administrative Assistant
Senior Clerk
Supervising Clerk Credentials
Senior Clerk
Supervising Clerk Administration
Intermediate Account Clerk
Intermediate Typist
Editorial Coordinator
Production Supervisor
Layout Composer
Senior Offset Operator
Offset Equipment Operator
Intermediate Typist
Principal San Diego County Juvenile Hall School Hillcrest School
Hillcrest School
Intermediate Clerk
Junior Clerk
Director Library Service
Senior Stenographer
Circulation Librarian
Curriculum Librarian
Catalog Librarian
Book Repairer
Senior Clerk
Circulation Assistant
Clerk Page
Intermediate Clerk
Library Catalog Technician
Junior Typist
Assistant Book Repairer
Intermediate Clerk
Junior Clerk
Clerk Page P.T.
Director Audio-Visual Service
Senior Stenographer
Intermediate Stenographer
Administrative Assistant
Audio-Visual Coordinator
Electronics Technician
Artist Illustrator
Senior Clerk Circulation
Shipping Clerk
Audio-Visual Utility Technician
Film Serviceman
Intermediate Clerk Receiving
Junior Clerk
Intermediate Clerk
Junior Clerk
Deliveryman

SAN DIEGO COUNTY, CALIFORNIA


of EDUCATION
RINTENDENT
OOLS
2 Supervising Clerk
3 Intermediate Stenographer
4 Intermediate Stenographer
184 Telephone Operator
189 Telephone Operator P.T.
RINTENDENT
SERVICES
75 Senior Stenographer
45 ASSISTANT SUPERINTENDENT
BUSINESS SERVICES
46 Senior Stenographer
47 District Financial Advisor
48 Senior Stenographer
49 Consultant Business Field Services
147 "
50 Transportation Technician
182 Assistant Transportation Technician
52 Chief, Schools' Accounting
53 Intermediate Stenographer
54 Principal Clerk
55 Supervising Clerk
56 Intermediate Account Clerk
57 "
58 "
61 "
138 "
160 "
161 "
185 "
186 "
59 Senior Account Clerk
60 "
62 Junior Clerk
63 "
64 "
139 Intermediate Account Clerk
65 Senior Account Clerk
66 Intermediate Account Clerk
67 "
141 "
187 "
71 Supervising Clerk Legal
72 Intermediate Stenographer
73 Senior Clerk
68 Senior Clerk Administration
69 Intermediate Typist
70 Intermediate Clerk
78 Building Clerk
127 Director Pupil Personnel Services
128 Senior Stenographer
129 Intermediate Clerk
134 Intermediate Stenographer
162 " P.T.
130 Guidance Coordinator
131 "
132 "
133 "
163 "
177 "
108 Special Education Coordinator
165 Director Community Ed. Resources
92 Media Technician
178 Senior Clerk
180 Intermediate Stenographer
166 Curriculum Coordinator
167 "
105 Director Curriculum Co-ordination
106 Intermediate Stenographer
76 Senior Clerk
77 Junior Clerk
175 Intermediate Typist
110 Mobile Shop Ind.-Tech. Consultant
111 " "
109 Curriculum Coordinator Art
114 Curriculum Coordinator Music
125 Curriculum Coordinator Foreign Language
107 Curriculum Coordinator, P.T.
116 Coordinator
117 "
118 "
119 "
120 "
121 "
122 "
123 "
124 "
152 "

of study, catalogs, teachers' guides, guides to school business practices, and the superintendent's monthly newsletter.

Business Services

The business services department audits and processes school budgets. It operates a legal advisory service for the local districts, and has advisory services in schoolhouse planning, research and transportation. It also serves as the center for cooperative purchasing ventures, taking bids on common items desired by each of the local districts.

ST. LOUIS COUNTY, MISSOURI

St. Louis County is unique in two respects. First, it has two distinct cooperative ventures involving the same districts. Second, while one of these is a fairly conventional intermediate unit (although not an arm of the state), the other is a voluntary association -- albeit one that has been operating for better than 30 years.

The conventional intermediate district involves 27 districts within St. Louis County. It is responsible for the education of handicapped children in all of the county's districts other than the City of St. Louis. It levies taxes directly against real estate within its boundaries.

The second cooperative venture is concerned primarily with a film library based entirely on a gentlemen's agreement among the same 27 independent school boards. Several other services are also supported to a minor degree.

Naturally, voluntary associations of school districts are not in and of themselves unusual. University study councils are an obvious example of the voluntary decision of local districts to work together in a common group. What is unusual about this association is first, its form and second, its affluence.

Unlike university study councils or such organizations as the Educational Research Council of Greater Cleveland, there is no central organization around which the districts have united. There is no university or other entity to provide the space, personnel or other services desired.

Perhaps more important is the affluence of an organization that owns jointly, for 27 independent districts, more than $1 million worth of audio-visual materials. One hesitates to consider what would happen if any one (or a whole group) of the district chose to withdraw from this entirely voluntary association and requested that is share of the acquired materials be turned over to it.

This voluntary association does all film and tape purchasing for the 27 districts. It has an annual budget of $307,000, which is raised by taxing the participating districts on a per capita and wealth basis. Last year it spent $116,500 on the purchase of films alone. Almost $89,000 is allocated for salaries of 18 persons employed by the voluntary organization.

Purchases are selected by committees of teachers from the various independent districts. These are then cataloged and each district is made aware of what films are available. Trucks are used to make daily pickups at and deliveries to the local districts.

According to school officials in the area, the voluntary organization has not been merged with the region-supported intermediate district because of local fears that this will lead to a county unit school district which might deprive the local school districts from providing the kind of education they feel they should have. From

Department of Education, Saint Louis County

SUMMARY OF DATA OF THE ST. LOUIS COUNTY SCHOOL DISTRICTS FOR THE 1962-1963 SCHOOL YEAR

District	Enumeration	Total Enrollment	Av. Daily Attendance	No. of Teachers	Assessed Valuation	Tax Levy	Current Costs	Cost Per Pupil ADA	Assessed Val. Per Pupil in ADA
Affton	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bayless	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Berkeley	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Brentwood	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Clayton	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Eureka R-VI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ferguson-Florissant R-2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hancock Place	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hazelwood R-I	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jennings	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kinloch	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kirkwood R-VII	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ladue	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Lindbergh R-VIII	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maplewood-Richmond Hgts.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mehlville R-IX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Normandy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Parkway Consolidated	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pattonville R-III	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ritenour	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Riverview Gardens	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
University City	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Valley Park	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Webster Groves	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wellston	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jefferson Barracks	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Special District		[illegible]	[illegible]	[illegible]			[illegible]		
Totals	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		
Averages						[illegible]		[illegible]	[illegible]

Special District not included in average cost per pupil and assessed valuation per pupil because of the unique nature of its operation the point of view of efficiency or interest they see no reason why the two units -- one involved in special education, the other in the purchase and distribution of audio-visual tools -- could not be merged into a single organization.

LOS ANGELES CITY SCHOOL SYSTEM, CALIFORNIA

Although this is a single city school system, the Los Angeles City schools offer to their 750,000 students and 27,000 teachers many of the services being offered on a cooperative basis to the smaller districts of St. Louis, Oakland and San Diego counties.

Among these are an audio-visual department (housing a film library of 18,000 titles valued at $1.5 million); a publications department; a department of curriculum development; and a department of educational research.

Two services provided by the Los Angeles City schools were not observed in any of the cooperative groups surveyed and deserve special mention here, since each makes a major positive contribution to education in the city and each is feasible within the context of cooperative action among districts.

Publication office

The Los Angeles publications office is staffed by a director, a production specialist, a combination proofreader and copy editor, a secretary and a varitypist. For about $250,000 annually, this office writes, produces and distributes curriculum materials for the school system.

The basic function of the director and the copy editor-proofreader is to insure that all materials put out by the Los Angeles schools are in proper English, read well, are factually accurate and correspond with policies of the school district. This is a professional communications team.

Although the district does no mechanical printing itself at the present time, it does do a great deal of its own varityping as a cost saver. It also employs a production specialist to take bids on printing jobs, to select and prepare methods of printing and to act as liaison between the district and the supplier.

The publications center processes 75 to 100 publications a year, publications being defined as major works with a title and table of contents. It also produces hundreds of shorter items.

Science center

One of the unique facilities offered by the Los Angeles City Schools is a science center which makes available to participating high schools supplies for use science courses. The science center is operated as a branch of the division of instructional materials.

The elementary school science center is actually six centers located through out the district (which is almost the size of the State of Rhode Island). These centers are equipped with kits of various types for use by teachers. Individual teachers come to the center, "shop" it as they would a supermarket, and check out all of the kits that they desire. A clerk handles the checkout and an experienced science consultant is available to help teachers with specific problems.

The secondary school center is a single center from which materials are supplied to 122 junior and senior high schools by truck. It is just over two years old and was set up in response to the demands of science teachers in the city system.

These teachers had been obtaining perishable supplies by making fairly extensive trips to butchers, streams and other sources of biological specimens, purchasing them with their own money and receiving reimbursement from the district. In addition to making the collection of specimens difficult, the system itself was cumbersome and the prices paid for supplies unreasonable since every teacher was buying on a retail basis.

The science center makes all purchases of materials for the schools of the district and then sells these supplies to the individual schools at cost. The result is a great reduction in costs (the center gets as much as 40% discount from regular suppliers); the constant availability of supplies when they are needed (previously teachers had difficulty getting the supplies at the precise moment they were needed, often causing them to create makeshift lessons); and better supply storage (the center has large freezer facilities not available to local schools -- though the schools do have small freezers to enable them to keep materials for a short period of time). In addition, the center is able to obtain, and make available, live specimens, such as protozoa, fish and small animals.

The center is staffed by a director, a technical assistant, a clerk and a truck driver. Deliveries are made to each school about once every six days in a refrigerated truck. The service will be considerably improved by the addition of further personnel and a second truck.

In addition to the biological supplies, the center houses and delivers other equipment needed in modern physics and chemistry courses. This is equipment that is called for once or twice a year in any single school. It is vital to the courses being taught (PSSC physics, Chem and CBA chemistry) but it would be too expensive to supply each school.

The center itself runs on a $15,000 annual budget for perishable supplies, $400 for its truck, and salaries. It is a very modest operation for the tremendous use it gets.

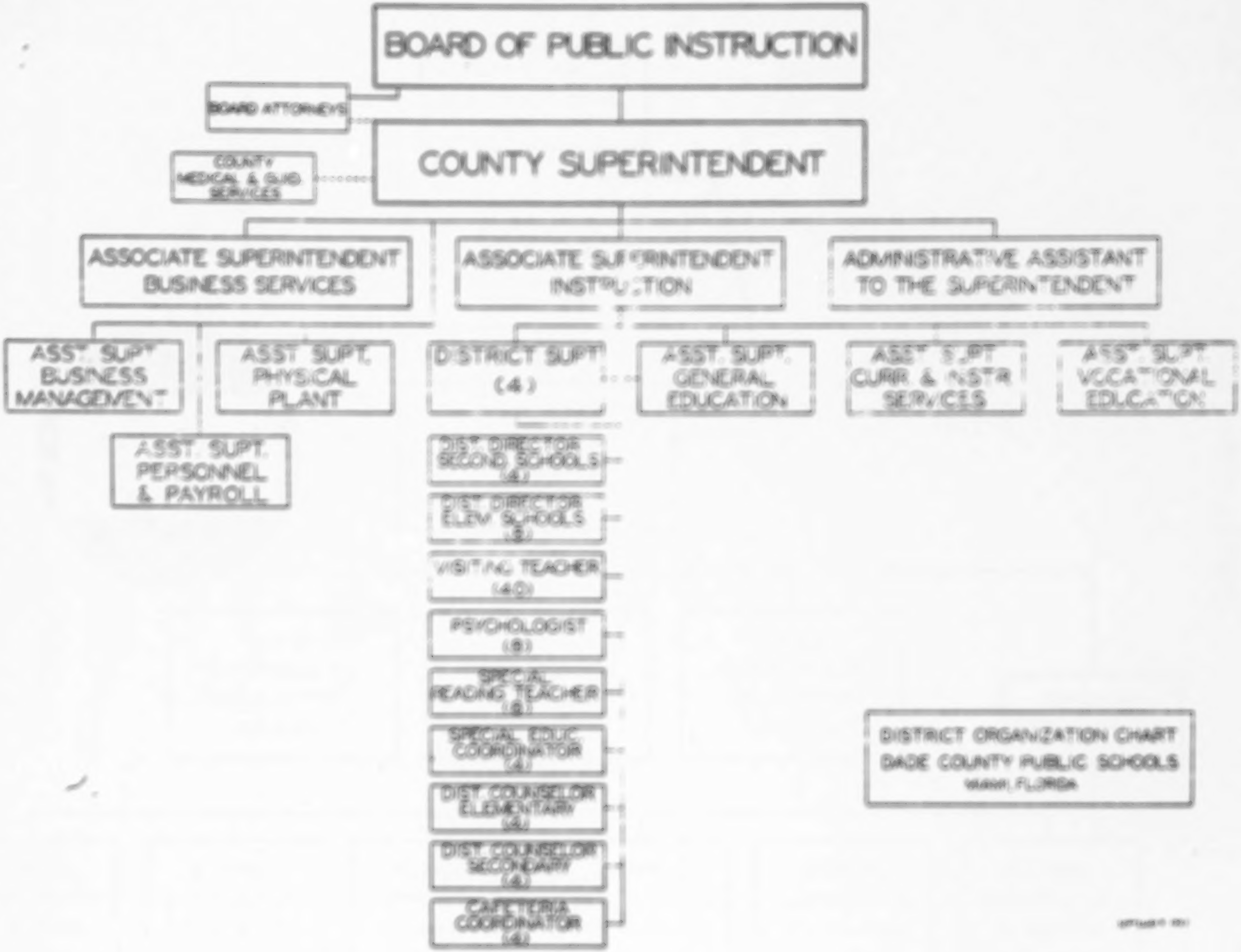
DADE COUNTY, FLORIDA

Although there are 26 municipalities with Dade County (including the City of Miami), the schools here are operated on a county-unit system, under the direction of a single superintendent and school board. The district offers many of the services (such as audio-visual, research and information, etc.) seen previously under cooperative circumstances. Two services, however, that have not been previously noted, have been developed to a high degree in Dade County. These are the use of television and radio as a curriculum tool and curriculum research.

Dade County's radio and TV division includes a director, 13 studio teachers, 5 supervisors and 25 other production, technical and clerical personnel. This staff operates two open-circuit television stations and an FM radio station, all of them owned by the school district. Total value of the equipment involved is $810,000.

The district operates its own telecast and broadcast lessons in science, foreign languages, and history and also beams pre-kindergarten classes to homes in the area. In addition, it puts on the air in-service courses for 1,000 teachers.

Curriculum research is carried out under an assistant superintendent


BOARD OF PUBLIC INSTRUCTION
BOARD ATTORNEYS
COUNTY SUPERINTENDENT
COUNTY MEDICAL & GUID. SERVICES
ASSOCIATE SUPERINTENDENT BUSINESS SERVICES
ASSOCIATE SUPERINTENDENT INSTRUCTION
ADMINISTRATIVE ASSISTANT TO THE SUPERINTENDENT
ASST. SUPT. BUSINESS MANAGEMENT
ASST. SUPT. PHYSICAL PLANT
ASST. SUPT. PERSONNEL & PAYROLL
DISTRICT SUPT. (4)
ASST. SUPT. GENERAL EDUCATION
ASST. SUPT. CURR. & INSTR. SERVICES
ASST. SUPT. VOCATIONAL EDUCATION
DIST. DIRECTOR SECOND. SCHOOLS (4)
DIST. DIRECTOR ELEM. SCHOOLS (3)
VISITING TEACHER (40)
PSYCHOLOGIST (8)
SPECIAL READING TEACHER (8)
SPECIAL EDUC. COORDINATOR (4)
DIST. COUNSELOR ELEMENTARY (4)
DIST. COUNSELOR SECONDARY (4)
CAFETERIA COORDINATOR (4)

DISTRICT ORGANIZATION CHART
DADE COUNTY PUBLIC SCHOOLS
MIAMI, FLORIDA

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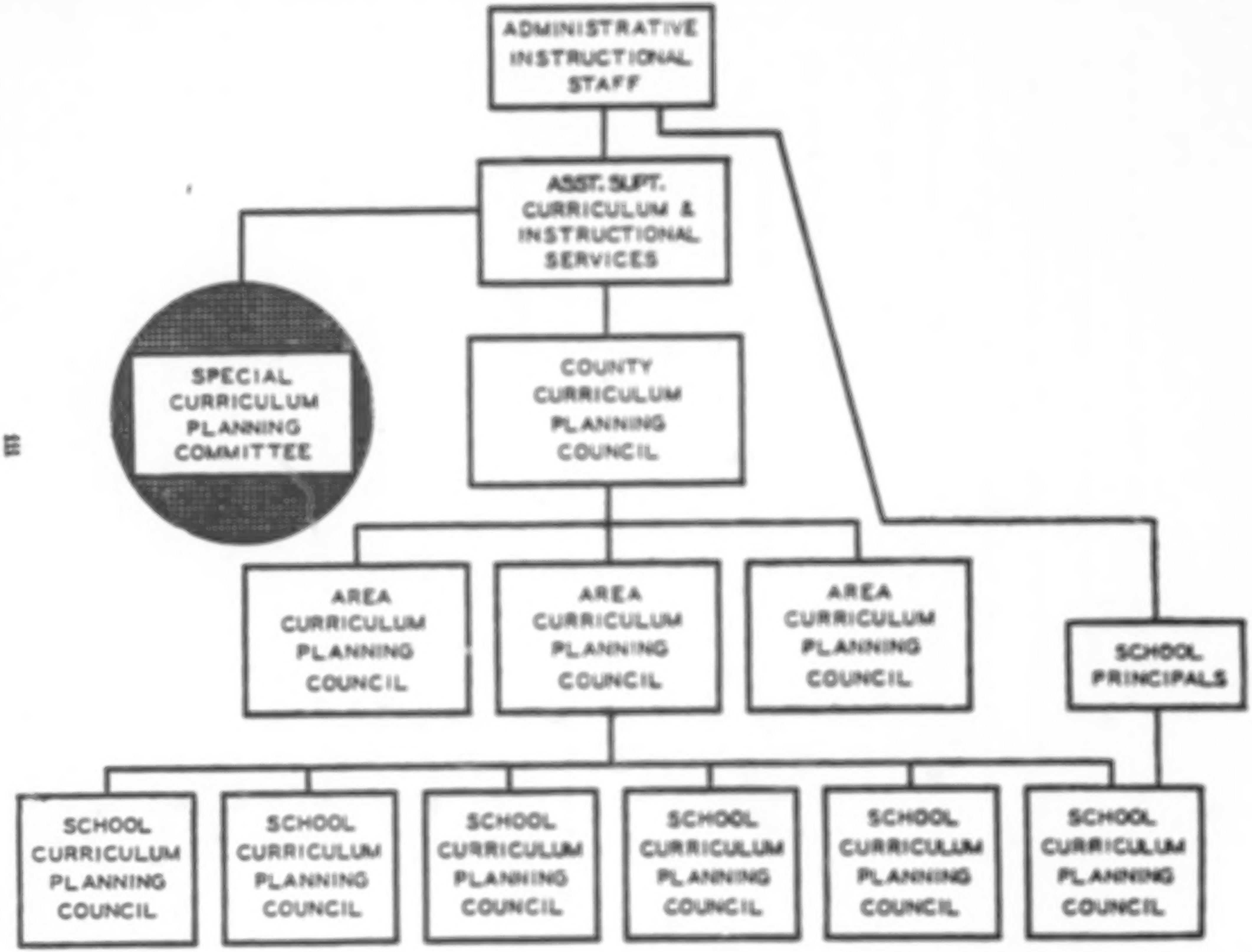
ORGANIZATION FOR CURRICULUM IMPROVEMENT


ADMINISTRATIVE INSTRUCTIONAL STAFF
ASST. SUPT. CURRICULUM & INSTRUCTIONAL SERVICES
SPECIAL CURRICULUM PLANNING COMMITTEE
COUNTY CURRICULUM PLANNING COUNCIL
AREA CURRICULUM PLANNING COUNCIL
AREA CURRICULUM PLANNING COUNCIL
AREA CURRICULUM PLANNING COUNCIL
SCHOOL PRINCIPALS
SCHOOL CURRICULUM PLANNING COUNCIL
SCHOOL CURRICULUM PLANNING COUNCIL
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SCHOOL CURRICULUM PLANNING COUNCIL
SCHOOL CURRICULUM PLANNING COUNCIL

for instruction. He works with four "area" curriculum planning councils, made up of representatives from various school curriculum councils. Under this set-up, it is possible to develop over all curriculum policies, while at the same time adhering to the wishes of individual schools. By the same token, these area and school curriculum councils act to disseminate information on curriculum plans back to the individual schools and teachers.

CHICAGO CITY SCHOOL SYSTEM

Once again, Chicago is a large-city district providing many of the services that groups of smaller districts would have to band together to obtain. In this case, the principal investigator was particularly concerned with two programs offered: Data processing and an attack on the problems of drop-out students.

The Chicago schools are developing a complete data processing system, rather than using DP to perform specific functions. The object of the system is primarily to save clerical time for teachers. It is estimated that when the system is wholly operative it will eliminate 80% to 90% of each teacher's clerical duties, and at the same time, cut down sharply on the number of clerical employees.

The first part of this objective will improve the quality of instruction in the school system. The second will actually result in a saving of money for the system (despite the fact that better than $3 million will have been invested before the system even starts to operate). An additional advantage of systematized data processing: The district will have available to it information and research which cannot be currently obtained at any cost.

Basic to the Chicago DP system is a "scanner" that will make it possible to transfer all information on a typewritten sheet of paper onto magnetic tape, there to be stored or recalled through data processing machines, at will.

Chicago's system, which is the first educational installation of its type, took five years to develop. District officials identified 110 different functions that DP could perform for the district but only a handful of these will actually be operational within the five-year period.

The services available to the Chicago schools could easily be developed in a cooperative basis, but it would take agreement among the districts to expend money over a period of years without any immediate return and an agreement on clerical policies that would eventually allow for personnel savings.

Chicago's attack on drop-outs is of particular interest to a cooperative organization because it occurs after the student has left school. (Naturally, Chicago's schools work on the drop-out problem on a continuing basis while students are in school and the program has been quite successful. But this would always be the function of the local district since it involves counseling, special classes, etc. The second phase of Chicago's work -- after the student has left school -- would fit a regional center better.)

Under Chicago's plan, when a student leaves school he must sign a permission card. This card provides a great deal of information about the student and why he is leaving school. About four or five weeks after he quits, a card is sent to the student asking him to meet with a special counselor to discuss his job or lack of it and any opportunities there may be for him to return to school or to otherwise continue his education.

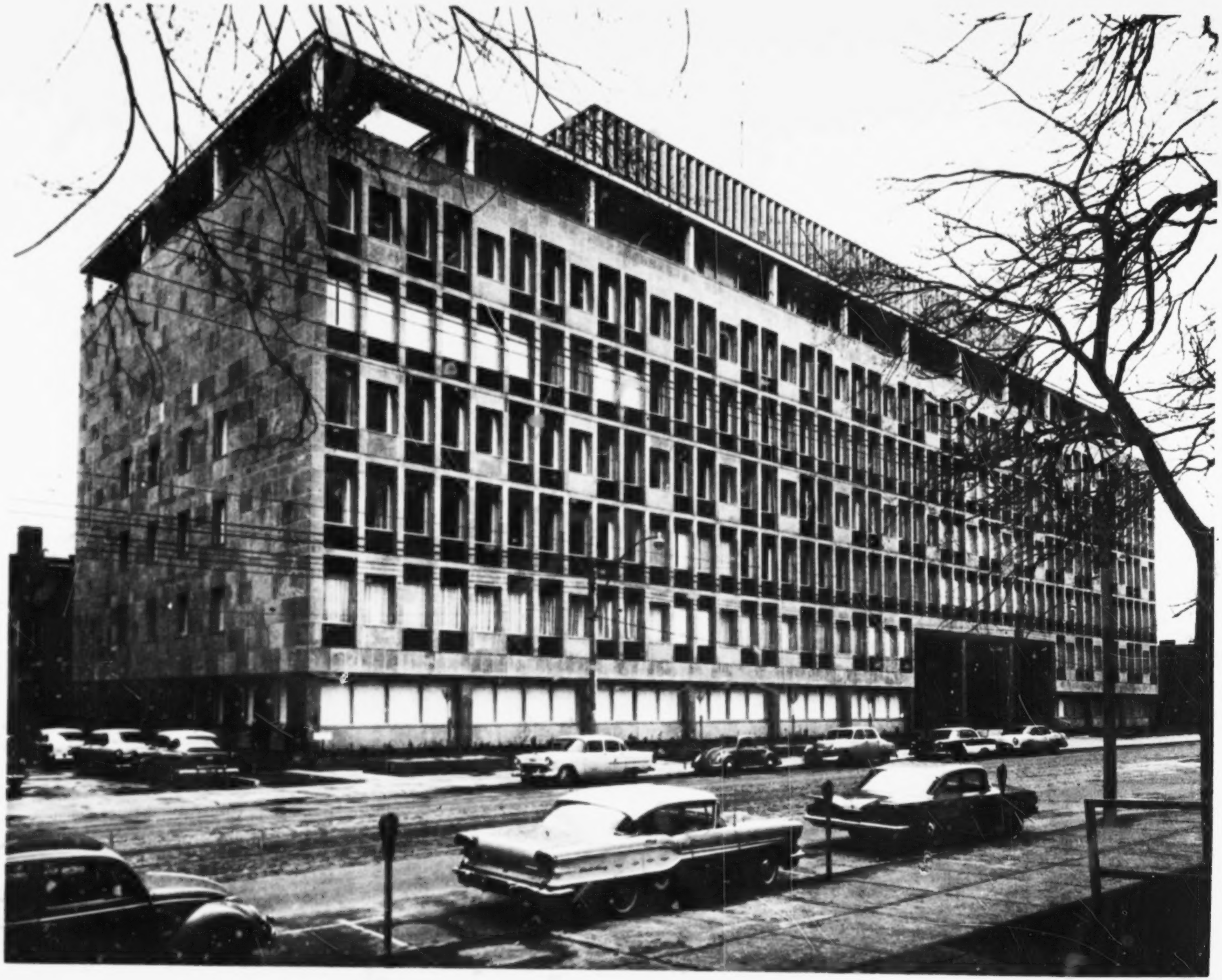
Many students -- especially those who are unable to obtain jobs -- respond to this offer. The great majority of these are counseled into a special work-study program that makes it possible for them to, in effect, go to school on a part-time basis. A program like this could easily be handled on a cooperative basis among small districts, no one of which would have enough student drop-outs to conduct the program on its own.

TORONTO, CANADA

The education center of the Toronto, Canada public schools could almost serve as the prototype of facilities (and services) conceived for a regional center in the United States.

TheToronto schools are a single unified school district, operated by a board of education and an appointed superintendent. It has 90,000 students in its jurisdiction.

The district's education center was constructed in 1961 to house the administrative offices and a whole series of services that had previously been scattered throughout the district. In addition, it was designed as a teacher meeting



space, housing books, teaching aids and equipment of value to the district's professional staff. In it, inspectors, supervisors and consultants have resources and space for discussions with teachers and for demonstrations and displays. The center is also available as a meeting place for professional organizations.

Many years of planning preceded the construction of the Center and every reasonable measure taken to make working conditions practical and efficient. An open foyer with large glass areas makes an attractive and dignified entrance to the Education Center. The board room, located on the west side of the ground floor, is distinguished by fine panelling, spaciousness, and a gold color scheme of simple effectiveness.

Entrance to the public gallery of the board room is from the second floor; and comfortable seating has been provided there. On the second floor, also, are the executive offices and the academic department.

The third floor houses the purchasing and accounting departments, where recently installed electronic calculators are contributing to increased efficiency. The Metropolitan School Board, which rents its accommodation from the Toronto Board, is on the north side of this floor. The architects', engineering, maintenance and construction, and plant operations departments are all located on the fourth floor.

The top three floors of the Center are occupied by the curriculum center, the teaching aids department, the education center library, the research department and the publications department. These floors are the educational core of the building.

Curriculum center

For teachers and administrators, two of the most important floors in the Center are the fifth and sixth, which house the curriculum center. Here a teacher

can find materials, periodicals, books, facilities and knowledgeable assistance about his subject -- all in one carefully designed room. Separate rooms are provided for the various subjects, and the office of the supervisory staff concerned is either in the room or close at hand.

The science department provides aquaria so that living specimens are always available, together with a room which serves as both demonstration laboratory and display room. The music department features an acoustically-designed listening room. In the language arts area, speech and drama may be practiced on a small stage, with provision for an audience of teachers to watch class demonstrations or listen to lectures by authorities on the subject. The arts and crafts department will display children's work and often feature exhibits by acknowledged masters. Maps, display boards and space for exhibition of students' projects are available in the social studies room. The health and physical education department has a small gymnasium where a teacher who wishes to improve ability in a particular skill may do so in relative privacy and with expert help.

Similar excellent facilities are offered by all the departments -- mathematics, guidance, mental health, home economics, kindergarten, industrial arts, and special education.

The curriculum center provides a meeting place for more than 50 teachers' groups who conduct programs of professional improvement. Individual teachers can receive assistance through personal consultation or group discussions, and through the quality of student work and teachers' aids on display.

OTHER VISITS

The principal investigator visited many other service installations throughout the nation, many of them featuring fine operational services similar to those already described.

In Detroit's city schools, the expected effect of a single facility drawing all services together was discussed with the director. In Portland, Oregon, it became obvious that cooperation did not have to be among districts of a single size or bounded by any legal boundaries. A cooperative service organization has been set up in Portland involving the city school district and many of its smaller neighbors. Moreover, this organization crossed several county lines. At the present time it operates out of rented space.

The first major project undertaken by the Portland area organization is cooperative purchasing. Chief administrators identified more than 1,000 items used by all or many of the 18 independent districts. Many of these are office supplies but the list extends to such major items as school buses.

Specifications for each of the items were set in advance. A list was then circulated to each of the districts which indicated their purchasing needs. These lists were compiled and put out to bid by the regional office.

In New York State, the operations of Boards of Cooperative Services (BOCES) were studied because of the legal implications involved in cooperative services provided by supervisory districts.

ON-SITE CONFERENCES

Following his visitations to installations throughout the United States, the principal investigator arranged a series of seven workshop conferences with specialized personnel in the seven sponsoring school districts, designed to further test the feasibility of these cooperative services on a local basis.

The seven conferences explored the local implications of cooperation in the areas of library facilities and services; psychological and guidance services; research and development; continuing education; in-service education of teachers; electronic data processing; and curriculum development. Though these were the seven broad areas of specific interest to the sponsoring districts, it was agreed that a whole range of other services could be worked out on a cooperative basis for the benefit of the local districts. (Condensations of the seven conference reports -- along with the names of the participants -- will be found in the appendix to this report.)

One service not "conferenced" was publications. It was assumed, however, in all the conferences, that publication and communications facilities would be available in any cooperative undertaking in order to better disseminate developed materials to the cooperating districts.

Dissemination might take the role of printed materials, such audio-visual techniques as tapes, film or projectuals, or might be accomplished through the use of television or radio or both.

COMPARATIVE STATISTICS

School District	Approximate annual operating budget	Approximate budget for operation of central office	Number of students served	Average Cost per student for:	
				Education	Operation of central office
Baltimore, Maryland	$ 80,122,600.00	$ 1,510,500.00	184,876	$ 452.90	$ 8.54
Chicago, Illinois	295,000,000.00	6,580,000.00	536,000	550.00	12.00
Dade County, Florida	91,500,000.00	1,731,000.00	194,000	460.00	8.92
Detroit, Michigan	133,627,000.00	2,945,700.00	294,527	445.00	10.00
Los Angeles, California	368,899,000.00	---	750,000	500.00	---
Los Angeles County, Calif.	320,000,000.00	2,500,000.00	750,000	425.00	3.30
Montgomery County, Md.	59,533,115.00	260,700.00	199,444	520.00	2.60
Oakland County, Michigan	75,000,000.00	362,000.00	183,000	405.78	3.91
Portland (Multnomah Cty), Oregon	57,000,000.00	488,000.00	108,000	500.00	4.51
San Diego County, Calif.	122,474,500.00	2,007,700.00	257,469	477.00	7.87
St. Louis County, Mo.	60,535,900.00	400,000.00	142,000	425.00	2.82
Toronto, Canada *	63,000,000.00	3,000,000.00	106,000	600.00	30.00

* Figures include an Architectural Department in the Central Office

CHAPTER IV

PROBLEMS, POSSIBILITIES AND RECOMMENDATIONS

There has been more change in American education in the last 10 years than in the previous 100. If anything at all is constant in education today, it is the need for, the interest in, and the fact of, change.

This is not change for change's sake. Schoolmen today are faced with a challenge never before posed to education. Technological developments throughout our world have rendered the uneducated man obsolete. The day of men working their way to the top despite lack of formal schooling is past. Every child growing up in the United States must be educated to the limit of his ability. And no student can be allowed to squander his abilities through lack of opportunity to exploit them.

This challenge is being met in every part of our nation. Educators are using new methods, techniques and tools in an effort to provide the best possible education for every child. But educators, in general, are not innovators. The great majority of them are looking for ways that do not involve pioneering to meet this challenge.

The greatest aid schools throughout the nation can obtain is increased communications between and among districts, so that all districts -- and all children -- will have the advantage of the best thinking of those men in education who can truly be called innovators.

Many attempts have been made to provide this communication. Perhaps the most popular and common is the council, usually university-sponsored, in which groups of districts come together periodically. These districts will hire a council director, and perhaps a secretary, and rent space for his office. The general pattern is for the council to become an information-gathering organization. It usually provides statistical information to the member districts --often about the member districts themselves -- and occasionally serves to bring to the attention of the district leadership information about successful programs being carried on in districts around the nation. This information is usually fairly sketchy, most often containing no more than the name of the district involved and the type of program it is running.

Original research is seldom if ever undertaken by this type of council organization. The director is usually serving only for a year or two -- typically he is on leave from a university or district position -- and, as a result, there is constant leadership turnover and little opportunity for the creation and expansion of any major programs.

Such councils are primarily year-to-year operations and participating districts can and do leave them regularly. They generally deal only with the chief administrators of districts and little of value filters down to the teaching staff or children.

(It should be noted here that this is not meant as a condemnation of university study councils. Many of them have long-standing records of major accomplishments. But even the best study councils, by their very nature, are limited in the services they can offer to participating districts.)

Another form of cooperative services occurs when a group of districts band together on an informal basis to obtain certain services they all desire. Typically this will take the form of a film library, special education for the handicapped, or vocational education.

In general, personnel are hired to run the specific desired operation, space is rented and the service is started. Because no one of the districts involved wishes to invest any more heavily than necessary, staffing is kept to a minimum (too often the man hired for the job is the one who will work for the minimal figure set in the budget) and future planning is severely limited.

Because groupings like this have no legal status, they must rent space where it is available, regroup every year and limit their services to the specific function for which they were formed. There is no opportunity to explore other desirable services, even those related to the original concept.

On occasion, operations of this type do expand into other areas. But then new problems are created. Financing is the most obvious. Should districts pay only for those services that they use or must they pay on a set basis for all services, whether or not they are desired?

Under the "pay-for-what-you-use" basis, those districts that need the cooperative services least actually dictate the services to be performed. These are usually the wealthier or larger districts that verge on certain capabilities by themselves. Thus these districts may have access to business machines for payroll accounting. Not needing this on a cooperative basis, they would not support it. The few poorer districts that need such a service would not be able to support it alone.

On the other hand, should a district pay for services it is not obtaining? Even if the school boards were willing, would not the citizen groups have a very valid objection to paying for services the district is not using? Many cooperative ventures have been seriously upset by taxpayer resistance that has caused funding to fall below an acceptable level.

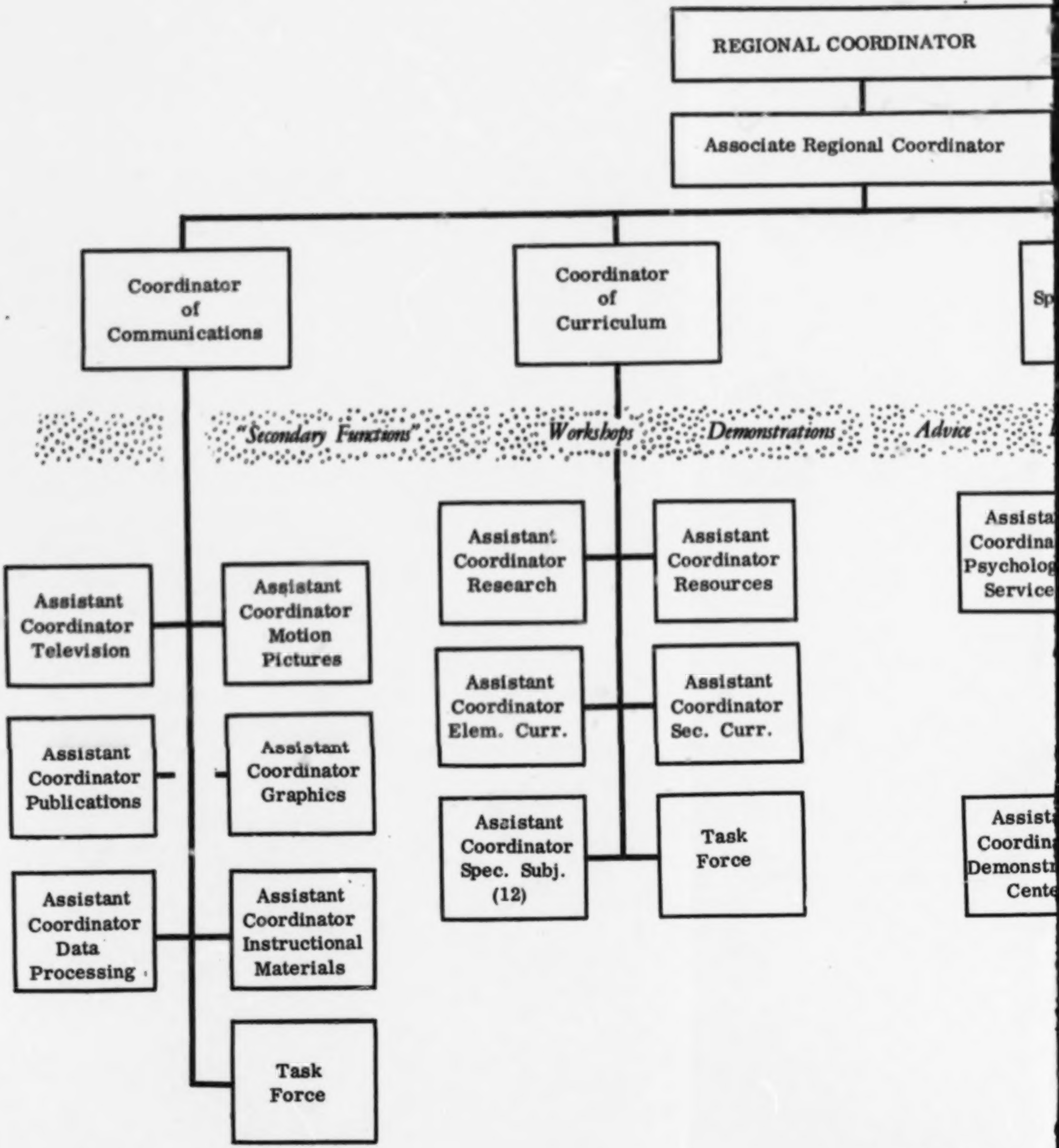
One other problem of these voluntary associations is the lack of adequate personnel. These are usually poorly paid, short term jobs, more of a stepping stone than a career. Moreover, the general pattern is to hire a man to run the film library, a man to run the special education program, a man to run the data processing installation. Overall leadership and planning is lacking or is left to the heads of the cooperating districts, burdening them with a task they are not equipped to undertake. One possible organization chart is shown on pages 43 and 44.

In many states, it would be impossible for groups of districts to form any more formal organizations than those described. Laws would have to be modified to make it possible for cooperating districts to own property, hire personnel and expend funds (to say nothing of raising funds). Unfortunately, there has been a great deal of local resistance to such legislation because of local fears that cooperation must inevitably lead to consolidation.

On the other hand, a legal entity does not of itself guarantee proper cooperation. A city school system may well be viewed as a merger of smaller districts (many large cities have turned to a form of organization under which there are district superintendents reporting directly to the city superintendent). But in too many of these systems, the various "cooperative services" desired have grown indep-

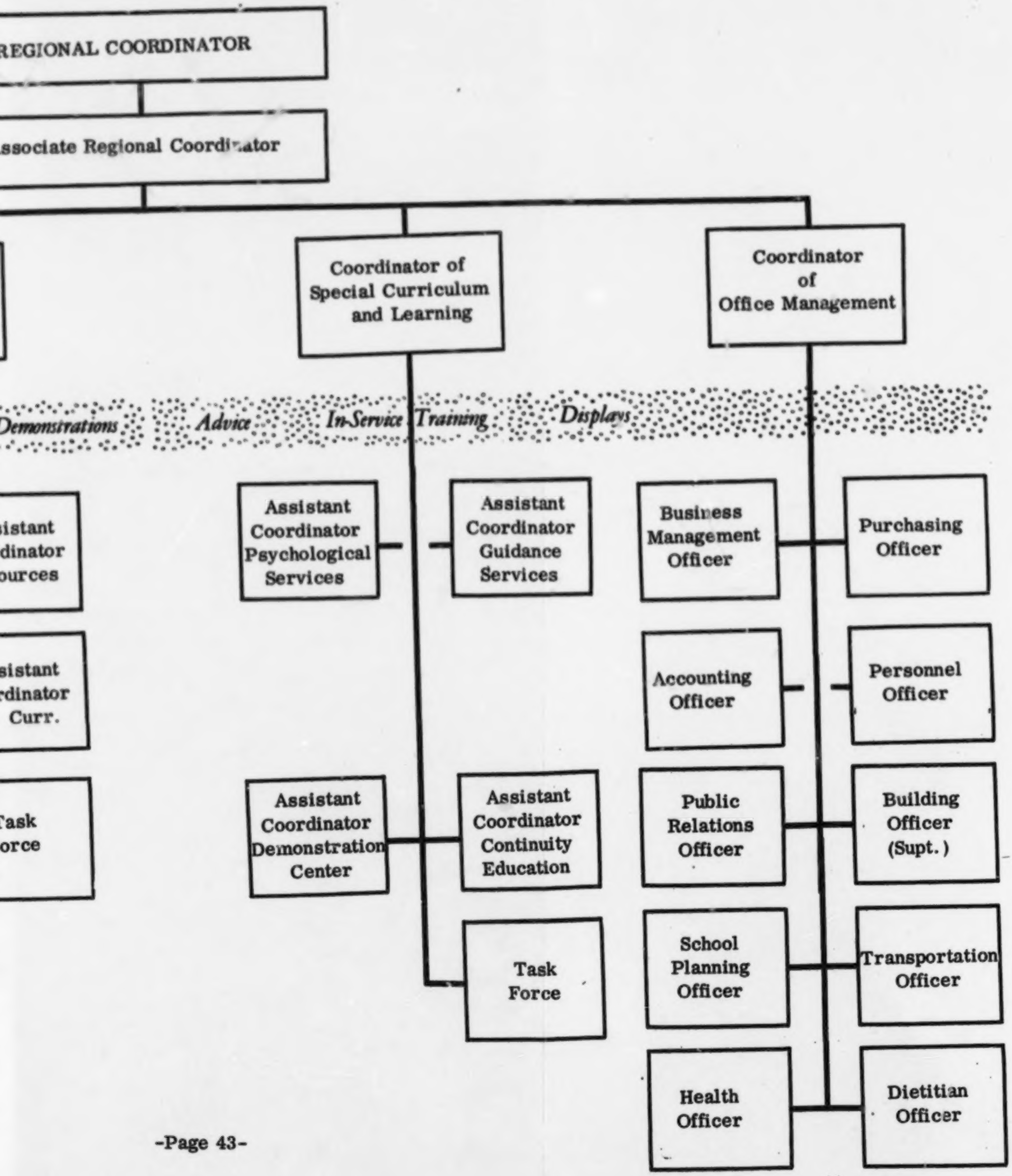
Regional Educational Communications

POSSIBLE REGIONAL ORGANIZATIONAL PATT


REGIONAL COORDINATOR
Associate Regional Coordinator
Coordinator of Communications
Coordinator of Curriculum
Sp
"Secondary Functions"
Workshops
Demonstrations
Advice
Assistant Coordinator Television
Assistant Coordinator Motion Pictures
Assistant Coordinator Publications
Assistant Coordinator Graphics
Assistant Coordinator Data Processing
Assistant Coordinator Instructional Materials
Task Force
Assistant Coordinator Research
Assistant Coordinator Resources
Assistant Coordinator Elem. Curr.
Assistant Coordinator Sec. Curr.
Assistant Coordinator Spec. Subj. (12)
Task Force
Assista Coordina Psycholog Service
Assist Coordin Demonstr Cente

cational Communications Center

GIONAL ORGANIZATIONAL PATTERN


REGIONAL COORDINATOR
ssociate Regional Coordinator
Coordinator of Special Curriculum and Learning
Coordinator of Office Management
Demonstrations
Advice
In-Service Training
Displays
sistant dinator ources
sistant rdinator Curr.
Task orce
Assistant Coordinator Psychological Services
Assistant Coordinator Guidance Services
Assistant Coordinator Demonstration Center
Assistant Coordinator Continuity Education
Task Force
Business Management Officer
Purchasing Officer
Accounting Officer
Personnel Officer
Public Relations Officer
Building Officer (Supt.)
School Planning Officer
Transportation Officer
Health Officer
Dietitian Officer

JOB SPECIFICATIONS

REGIONAL COORDINATOR:	The regional coordinator will act as a consultant and service director to the superintendents of schools and the boards of education of the cooperating school districts as well as general administrator for the complex. In relation to the center, he would have responsibilities similar to those of a superintendent of schools and would require the same qualifications.
ASSOCIATE REGIONAL COORDINATOR:	The associate regional coordinator would assist the regional coordinator in managing the entire complex and coordinating all projects and programs. He should have broad practical experience in management techniques. Teaching and educational administrative experience would be highly desirable. He should be familiar with all areas of the operation including research and curriculum, but his strength should lie in the areas of coordination and communication.
COORDINATORS AND ASSISTANT COORDINATORS:	The coordinators and assistant coordinators of various areas would provide services to the local school districts that come within the purview of their departments. These positions are leadership roles. The coordinators and assistant coordinators must be experienced in their fields of specialization. Their major roles will be to act as consultants to -- and provide services for -- the cooperating school districts.

endently of each of the others. Thus, the data processing department is a business function. Television is an entity by itself. The film library becomes no more than a distribution center. Coordination between these independent services is held to a minimum by tradition, location and failure to understand the possibilities inherent in their operating together.

Another problem of cooperative services in the large city is their failure to react to the local problems of the constituent "districts." Thus, too often the same services are provided to schools in the highest and lowest economic sections of the city although such services may be unnecessary in one case and insufficient in the other.

Despite the problems involved in past cooperation among districts, the advantages of such cooperation are obvious -- provided they can be achieved. Cooperative action can offer to each district what each alone cannot afford. It's as simple as that.

Master planning. Sophisticated data processing. Full-time service of experts. A wide tax base for these services. All of these -- and much more -- can be accomplished through cooperation.

But to operate properly, these cooperative services must be placed within a legal framework. Many legal organizations could be formed. They can be organized among the districts themselves or in concert with colleges and universities. Several popular -- and functional -- types of regional organizations exist.

Such legal agencies can employ experienced personnel at salaries commensurate with the importance of their positions. They can offer permanent positions.

that will not be looked upon as stepping stones. With legal status, they can plan for future development, provide many services presently impossible, perhaps even operate specialized schools -- technical and vocational high schools for example -- or schools for the handicapped or the very bright. Such agencies might very well be the core for the creation of community colleges.

A legalized agency of this type envisioned would have greatly eased financial problems, too. Hopefully, it would be able to levy direct taxes. Moreover, it could be supported by the state government, and would be eligible for grants from state and federal government, as well as various foundations. Without legal status, none of these opportunities would be available.

In this conception, a regional organization assumes a new role -- a role of leadership, of liaison, of service. It becomes a vital part of the educational establishment rather than a mere whim of a few cooperating districts.

Facilities

For a regional center to operate properly it must have the proper facilities. But exactly what facilities are needed?

To some extent this will be determined by the services performed, by the number and type of districts involved, and the location of the center. Nevertheless, certain basic rules for any educational communications center can be set forth.

The center should be in a convenient location, near highways and within easy commuting distance of all of the participating districts. The building design and landscaping should be attractive and the center should have dignity and appeal so that people will want to come to it. And there should be sufficient parking for large groups

of teachers who may come to the center for special meetings.

Since the building would be used throughout the entire year it should be completely air conditioned. An effort should also be made to provide good lighting, ventilation and interior decor. The use of carpeting should be seriously considered. It would also be sensible to build maximum flexibility into the interior since it is entirely predictable that the building's functions will be continuously changing.

Obviously, a regional center can operate in temporary, rented or makeshift quarters, but to function at its best, it needs facilities designed for its specific function. But it is not necessary to build a huge, complete structure all at once.

Wherever possible, however, these areas should be completed in the first building stages. The lobby, professional library, conference spaces, auditorium and general administrative offices.

Since the major role of this center is people, the space allotted for the administrative offices should be spacious, preferably over-sized. A professional library almost automatically will become the center of any active regional organization, hence its inclusion in first-stage planning.

Some regions may not want specific curriculum specialists on their staff at all times but space for research and curriculum people is essential. Some space must also be provided for demonstration areas in which to exhibit materials and equipment while staff members are working on a project. An auditorium will make it possible to bring large groups of teachers together at once, a prime objective of a regional organization.

This, then, is the basic regional center, the core that is essential if the region is to operate effectively at all. But that's not all it is. The center's other facilities must be determined strictly by the uses to which the region wishes it put.

One common role for a center may be the distribution of instructional materials such as films, filmstrips, records, videotapes, etc. Provision must be made for an instructional materials center that would house any specialized materials produced by the regional center as well as commercial materials available for teacher education. If the production of projectuals and other AV materials is contemplated, a production center -- well equipped and well staffed -- becomes essential.

One major role of the regional center is to "service the services." In other words, the heart of a regional center must be research and curriculum development. It's the most logical reason for existence. Modern technology should be used to disseminate information on this research and development to the people in the region through television, motion pictures, graphics, publication of materials, etc. Sophisticated facilities should be provided for the production of these materials.

Other services such as data processing, psychological and guidance, demonstration classrooms, a cafeteria, or television sending equipment (in a studio) may be called for in any specific regional plan. Each of these -- like those mentioned before -- must be planned and designed to meet the specific needs of a given regional center.

CHAPTER V

THE PLANS

In carrying out this project, the principal investigator was charged with designing a series of components that might be found in even one regional organization, and a single feasible building that might serve as a prototype for a region actually interested in "getting its feet wet."

The first of the following pages is taken up with the "optimum" plans -- a building in which every conceivable service is offered in the best possible space. No effort was made to combine functions, no matter how logical such combinations might be. Thus, for example, there is room for a science materials distribution center, though this function could easily -- and logically -- be carried out through the instructional materials center, which is also included. On the other hand, the space designated for a science center might be used for humanities, foreign languages, or physical education if this was the desire of the participating districts.

Moreover, because the basic emphasis was to design a series of modules, each of which could stand on its own and each of which served a specific function, no attempt was made to provide a final "functional" plan for this optimum center. Instead, it was hoped that each individual regional organization would examine these component modules and select those that made most sense to its members.

The space within the building is organized into five centers: Special curriculum and learning, Curriculum development, Technical support, Mass communications, and General administration. Each of these centers represents a special design problem within itself.

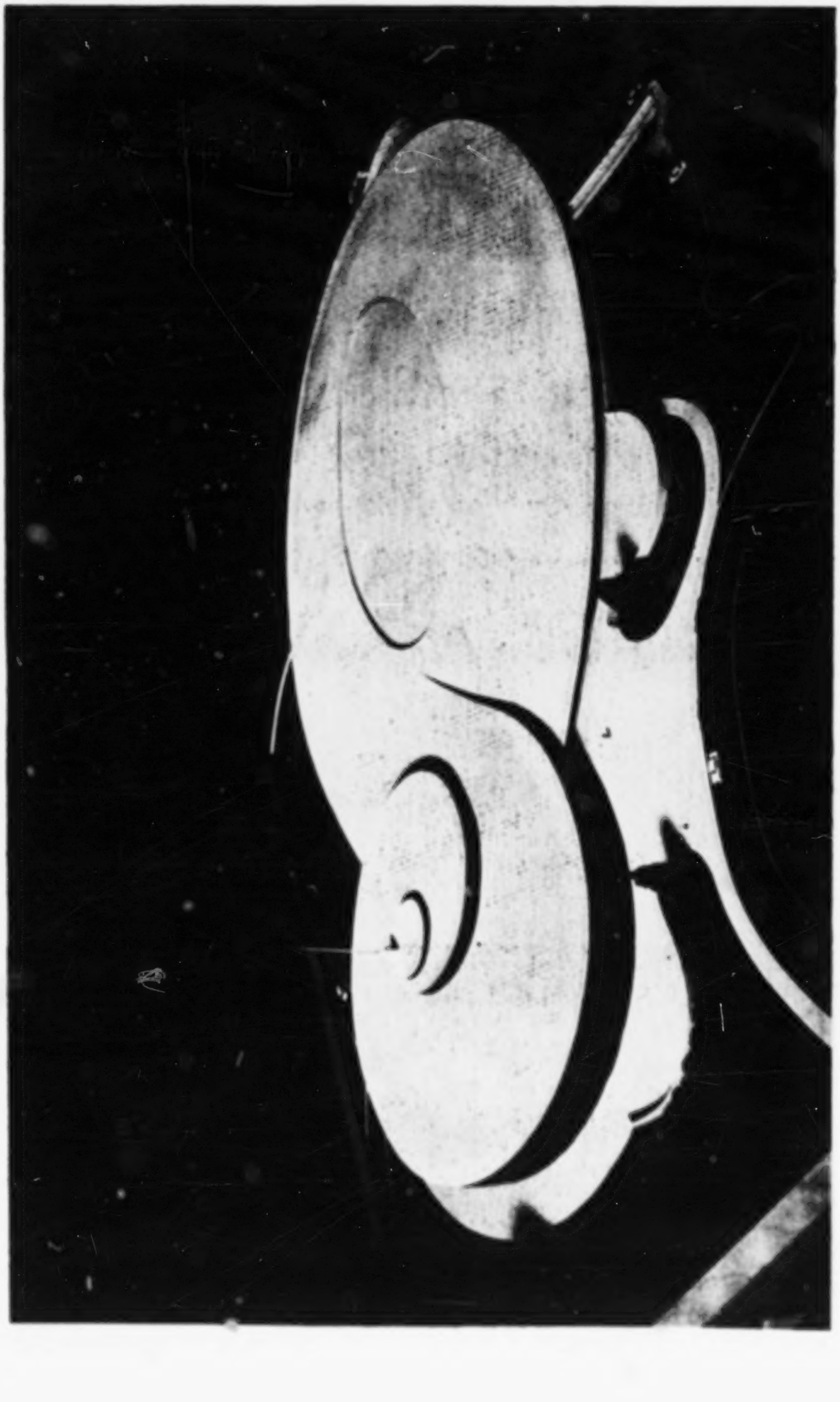
The centers are separated by area to permit closer administrative control of their independent functions. Traffic flow is important within each center as well as between the centers and throughout the structure. The architects not only considered pedestrian traffic flow, but we also considered the traffic requirements for private automobiles and buses. It is anticipated that there will be many student and faculty groups visiting the center and these groups must be accommodated efficiently without hindering the program of the permanent staff stationed in the building itself.

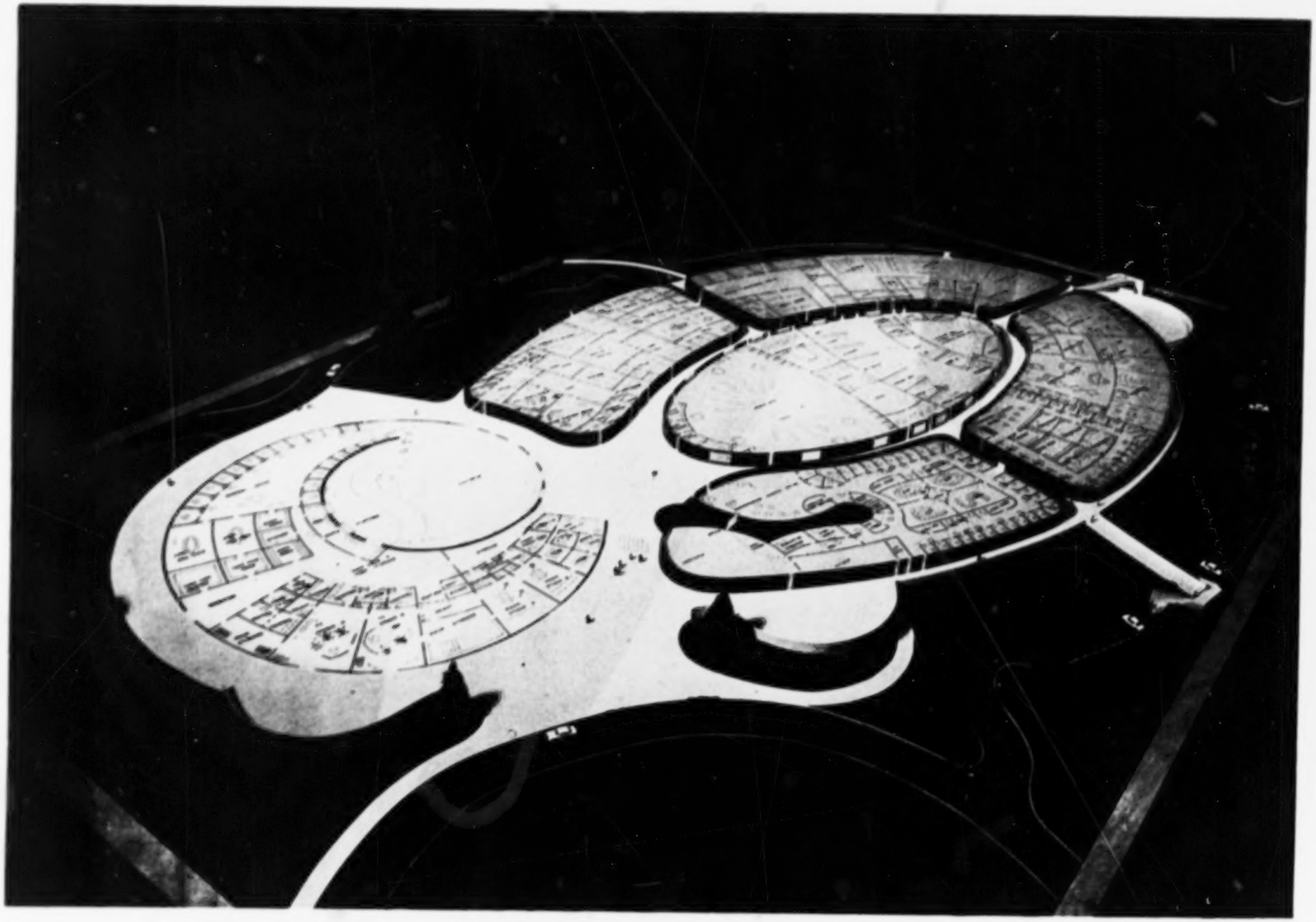
It is felt that free flowing space permits greater latitude in reaching a design that will truly meet the needs of the program. Form can truly follow function, if there is complete latitude in selection of form itself.

Each component designed into the plans is described in the specifications starting on page 53. Included are details on the functions it is designed to perform, the equipment, staff and space needed, and an indication of the costs involved for that component. The specifications for each area are followed by the architect's proposed plan for the area. Although any one -- or group -- of these components might be designed into rented or temporary space in order to get a regional organization underway, it is hoped that, at some point, those modules chosen for the region would be designed into a single, workable building. An example of one such workable combination is given in the second set of building plans.

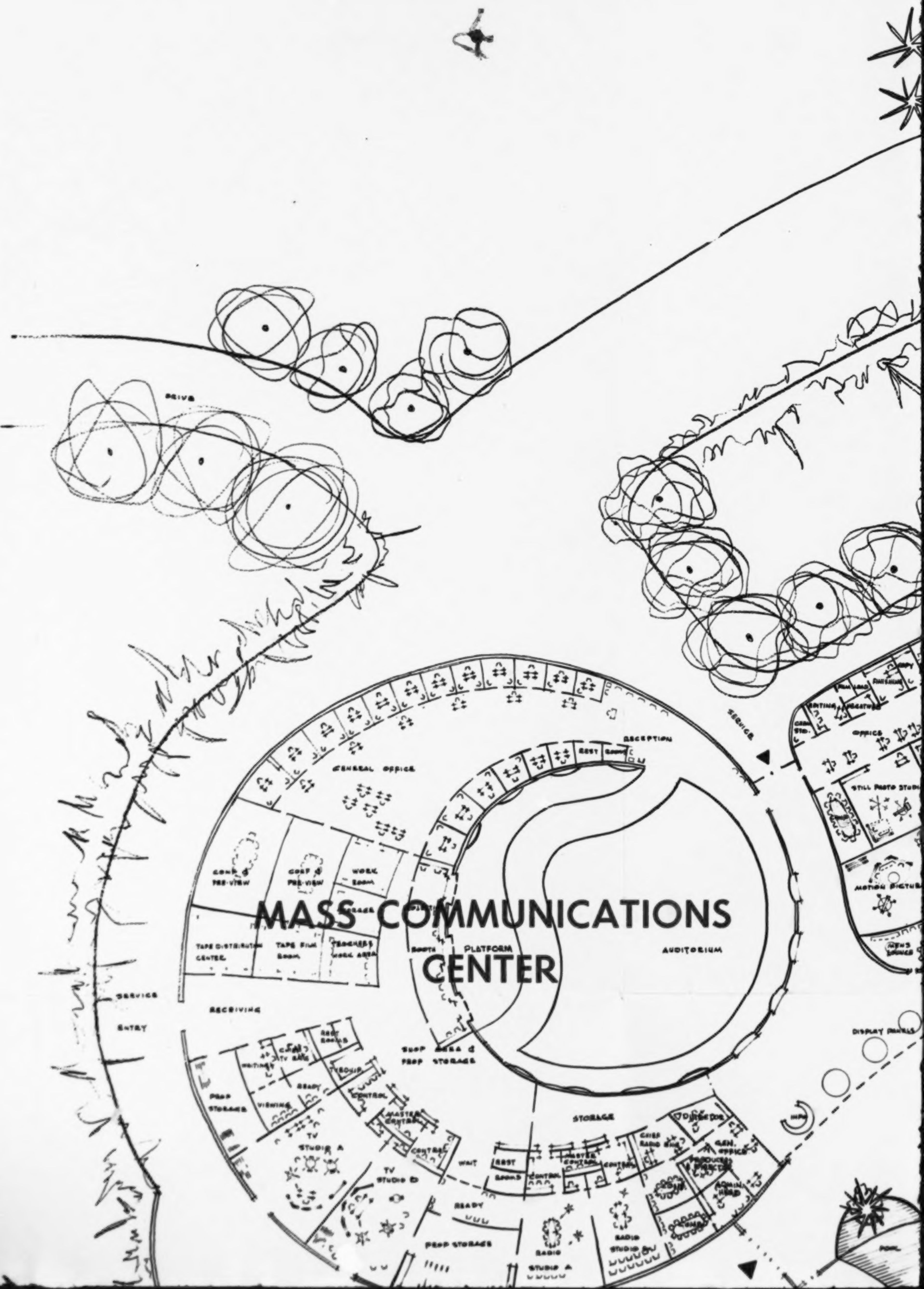
REGIONAL EDUCATIONAL COMMUNICATIONS CENTER

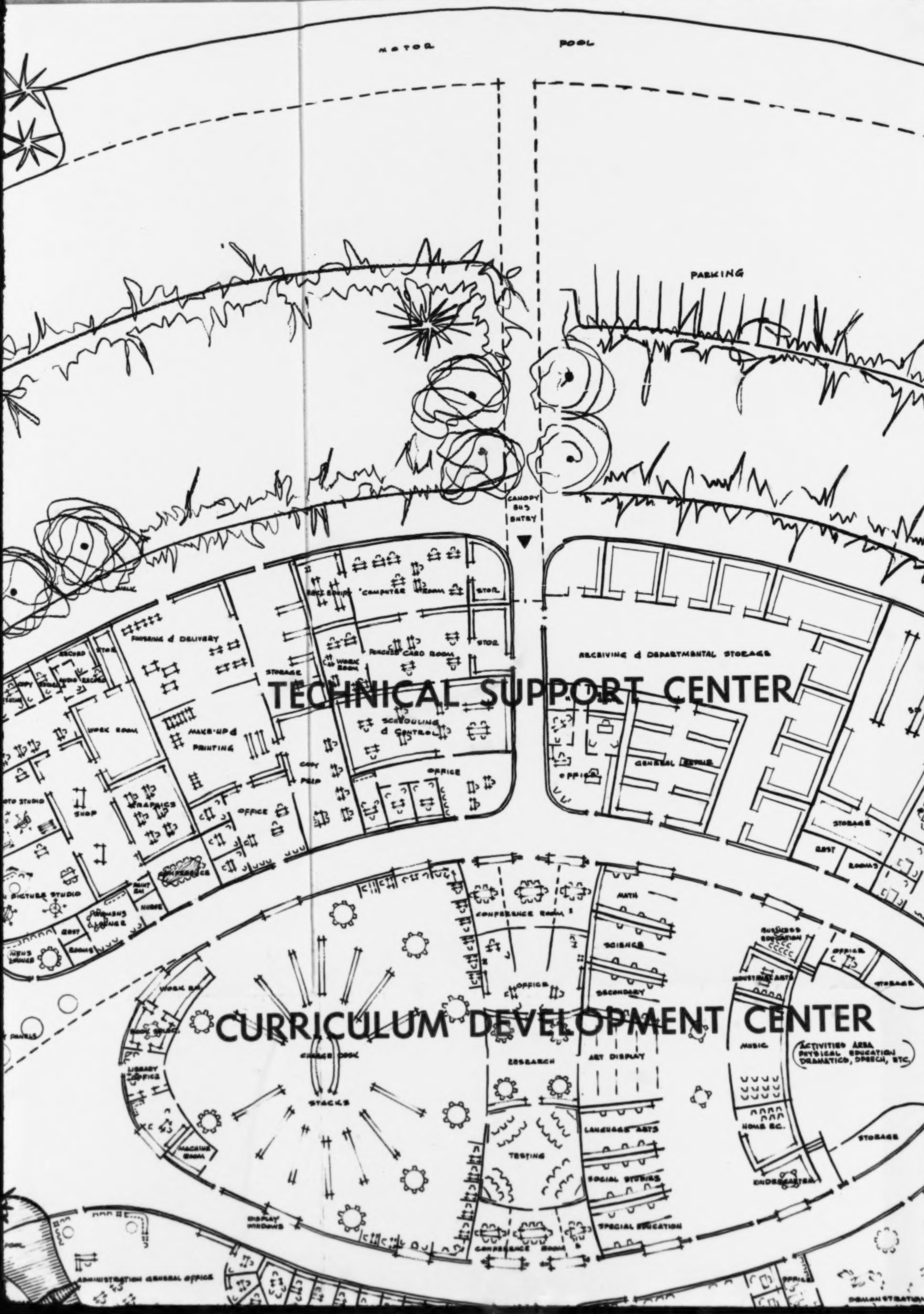
MASTER PLAN

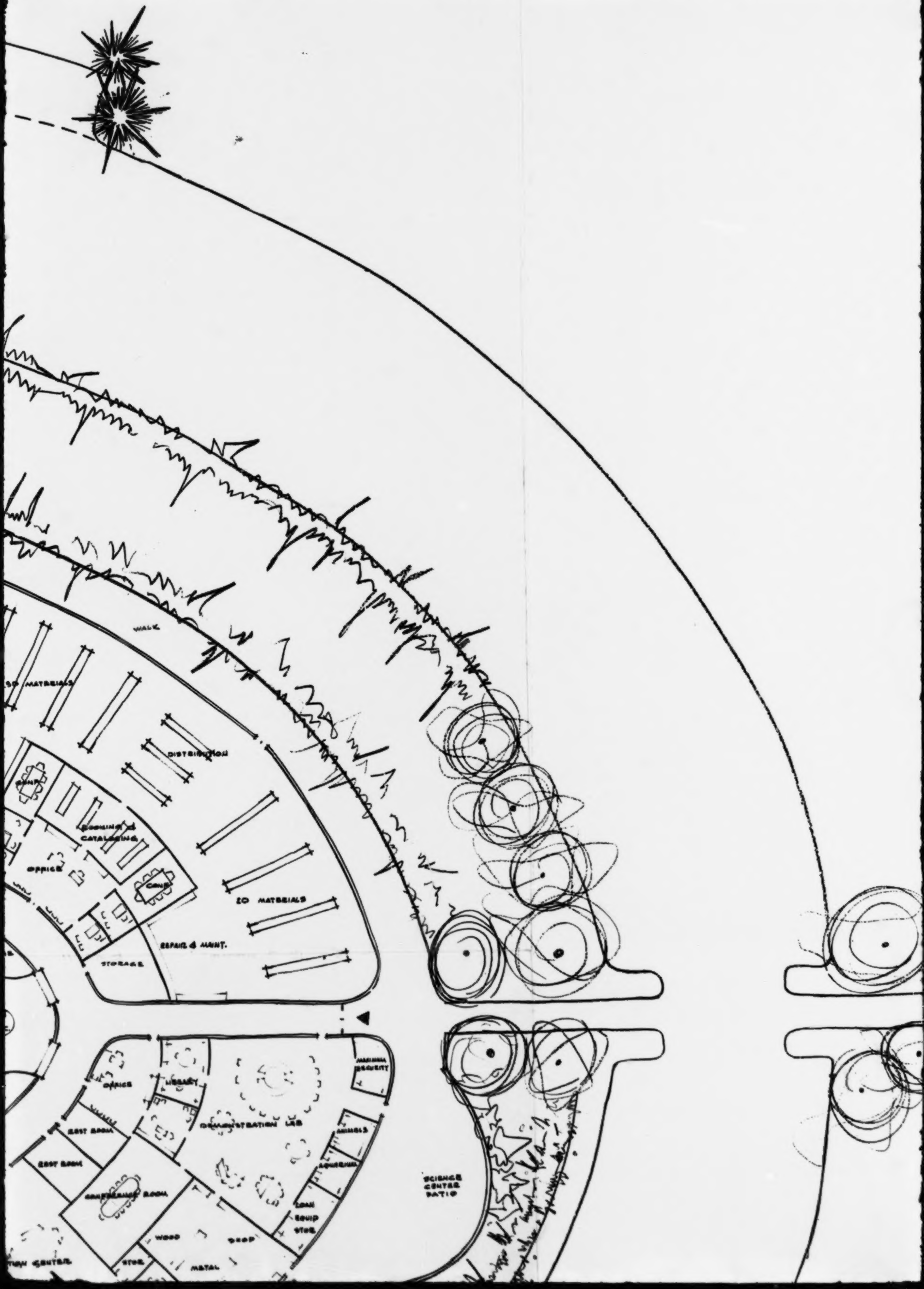


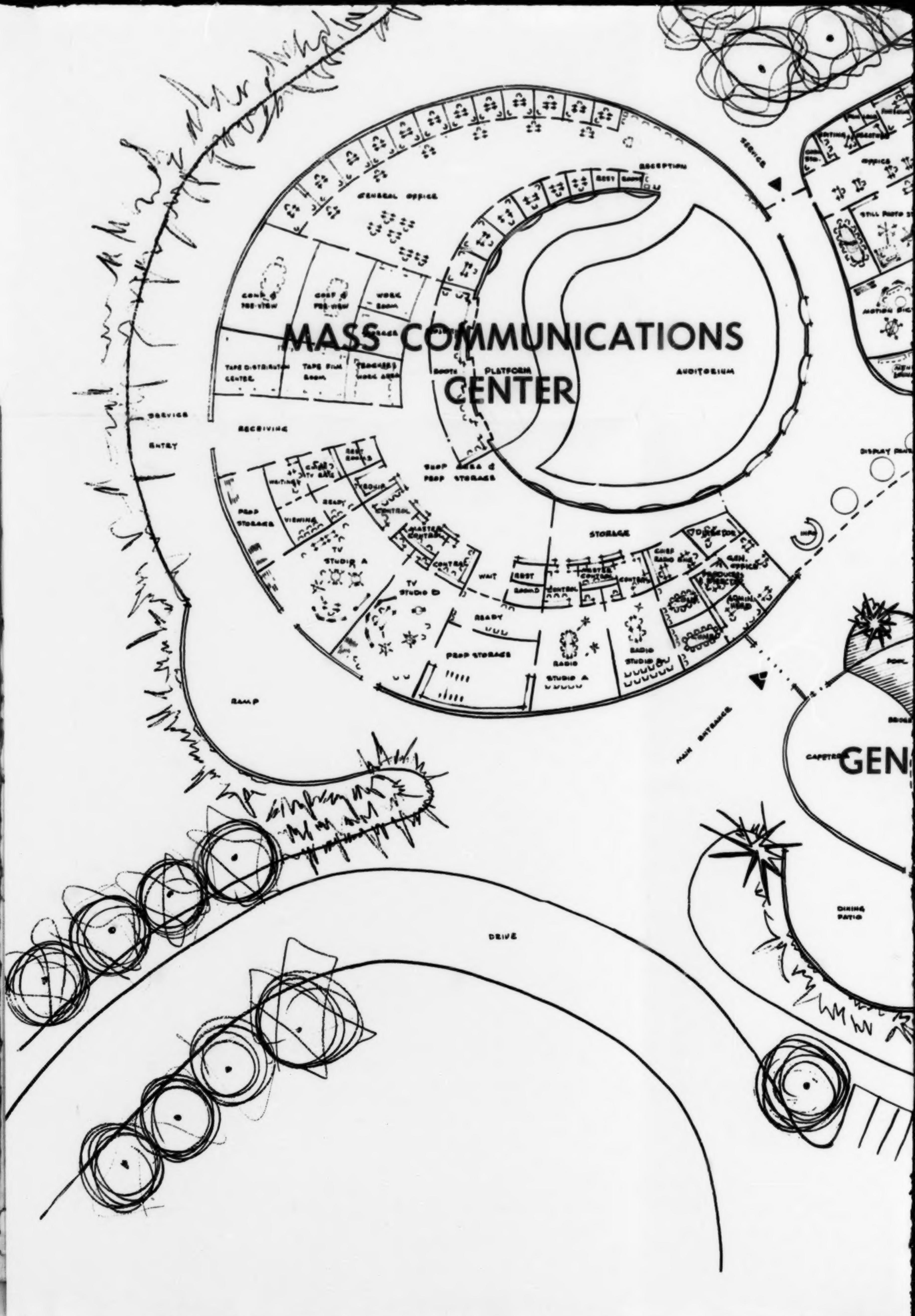


MASS COMMUNICATIONS CENTER


DRIVE
SERVICE
RECEPTION
REST ROOM
GENERAL OFFICE
CONF & PRE-VIEW
CONF & PRE-VIEW
WORK ROOM
STORAGE
BOOTH
PLATFORM
AUDITORIUM
TAPE DISTRIBUTION CENTER
TAPE FILM ROOM
TEACHERS WORK AREA
SERVICE
ENTRY
RECEIVING
SHOP AREA & PROP STORAGE
REST ROOMS
WRITING
READY
VIEWING
PROP STORAGE
CONTROL
MASTER CONTROL
CONTROL
TV STUDIO A
TV STUDIO B
WAIT
REST ROOMS
CONTROL
MASTER CONTROL
CONTROL
STORAGE
CHIEF RADIO ENG.
DIRECTOR
GEN. OFFICE
PRODUCER DIRECTOR
ADMIN. HEAD
READY
PROP STORAGE
RADIO STUDIO A
RADIO STUDIO B
DISPLAY PANELS
POOL
EDITING
NEGATIVES
FINISHING
COPY
OFFICE
STILL PHOTO STUDIO
MOTION PICTURE
MENS LOUNGE


MOTOR POOL
PARKING
WALK
CANOPY BUS ENTRY
TECHNICAL SUPPORT CENTER
RECORD
STOR
COPY
AUDIO RECORD
FINISHING & DELIVERY
STORAGE
BACK EQUIP
COMPUTER ROOM
STOR
STOR
WORK ROOM
PUNCHED CARD ROOM
RECEIVING & DEPARTMENTAL STORAGE
WORK ROOM
MAKE-UP & PRINTING
SCHEDULING & CONTROL
COPY PREP
OFFICE
OFFICE
GENERAL REPAIR
PHOTO STUDIO
SHOP
GRAPHICS
OFFICE
CONFERENCE
PICTURE STUDIO
PRINT RM
NURSE
WOMENS LOUNGE
REST ROOMS
MENS LOUNGE
STORAGE
REST ROOMS
CONFERENCE ROOM
MATH
SCIENCE
SECONDARY
OFFICE
BUSINESS EDUCATION
INDUSTRIAL ARTS
OFFICE
STORAGE
WORK RM.
CURRICULUM DEVELOPMENT CENTER
BOOK SELEC.
PANELS
CHARGE DESK
LIBRARY OFFICE
STACKS
MACHINE ROOM
RESEARCH
ART DISPLAY
MUSIC
ACTIVITIES AREA PHYSICAL EDUCATION DRAMATICS, SPEECH, ETC.
HOME EC.
STORAGE
LANGUAGE ARTS
TESTING
SOCIAL STUDIES
KINDERGARTEN
DISPLAY WINDOWS
SPECIAL EDUCATION
CONFERENCE ROOM
POOL
ADMINISTRATION GENERAL OFFICE
OFFICE
DEMONSTRATION


WALK
3D MATERIALS
DISTRIBUTION
CONF.
BOOKING & CATALOGING
OFFICE
CONF.
2D MATERIALS
REPAIR & MAINT.
STORAGE
OFFICE
LIBRARY
MAXIMUM SECURITY
DEMONSTRATION LAB
ANIMALS
REST ROOM
REST ROOM
AQUARIUMS
CONFERENCE ROOM
SCIENCE CENTER PATIO
LOAN EQUIP STOR
WOOD SHOP
TION CENTER
STOR
METAL


MASS COMMUNICATIONS CENTER
GENERAL OFFICE
RECEPTION
REST ROOM
CONF & PRE-VIEW
CONF & PRE-VIEW
WORK ROOM
STORAGE
TAPE DISTRIBUTION CENTER
TAPE FILM ROOM
TEACHERS WORK AREA
BOOTH
PLATFORM
AUDITORIUM
SERVICE ENTRY
RECEIVING
REST ROOMS
SHOP AREA & PROP STORAGE
WAITING
TV SALE
READY
PROP STORAGE
VIEWING
TV STUDIO A
CONTROL
MASTER CONTROL
CONTROL
TV STUDIO B
WAIT
REST ROOM
CONTROL
MASTER CONTROL
CONTROL
STORAGE
DIRECTOR
CHIEF RADIO ENG.
GEN. OFFICE
PRODUCER DIRECTOR
CONF.
ADMIN. HEAD
READY
PROP STORAGE
RADIO STUDIO A
RADIO STUDIO B
RAMP
MAIN ENTRANCE
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POOL
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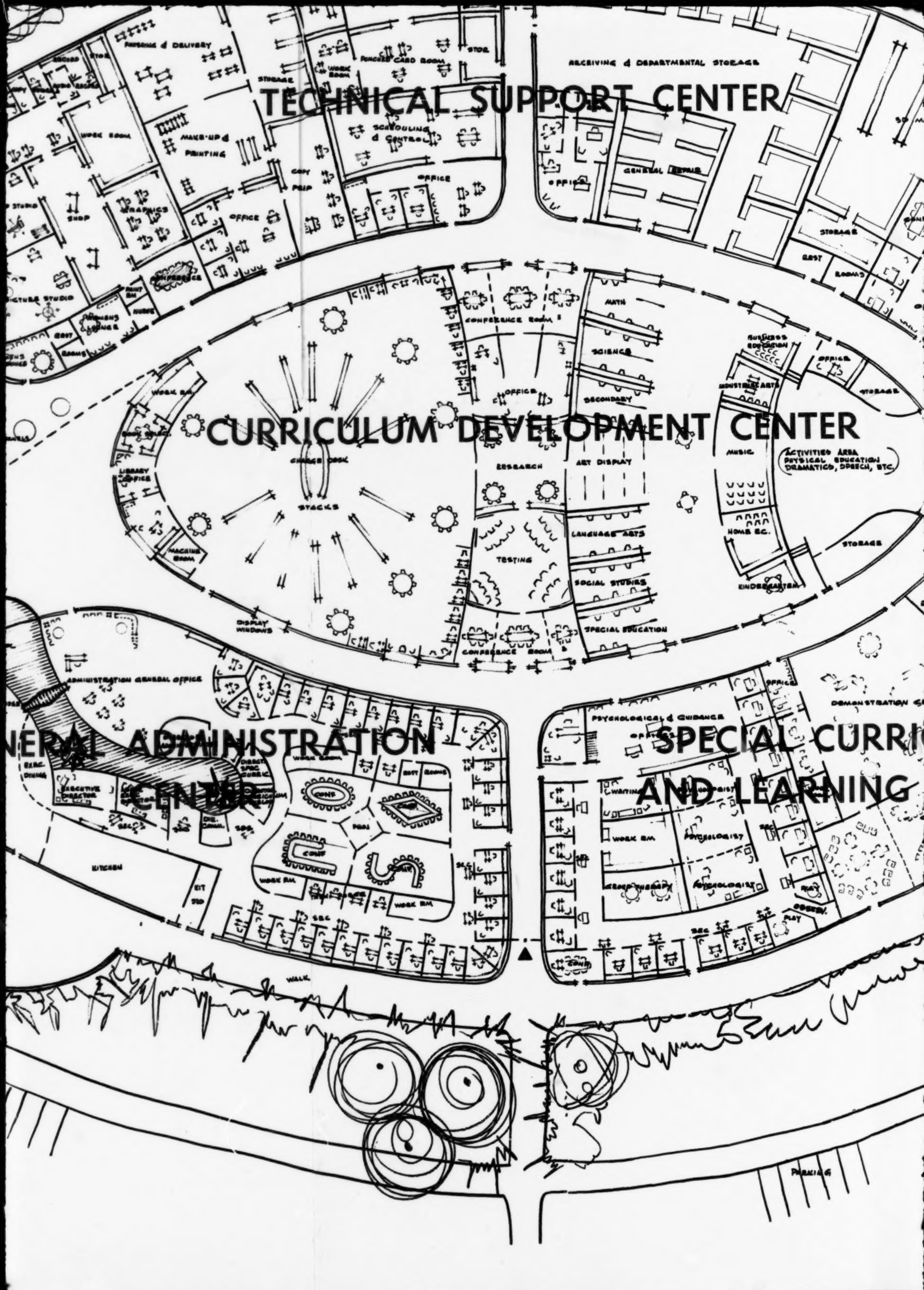
DINING PATIO


TECHNICAL SUPPORT CENTER
FINISHING & DELIVERY
RECORD
STOR
WORK ROOM
MAKE-UP & PRINTING
STORAGE
WORK ROOM
PUNCHED CARD ROOM
STOR
SCHEDULING & CONTROL
COPY PREP
OFFICE
STUDIO
SHOP
GRAPHICS
OFFICE
CONFERENCE
PICTURE STUDIO
PAINT RM
NURSE
WOMENS LOUNGE
REST ROOMS
RECEIVING & DEPARTMENTAL STORAGE
OFFICE
GENERAL REPAIR
STORAGE
REST ROOMS
CURRICULUM DEVELOPMENT CENTER
WORK RM
BOOK SELEC.
LIBRARY OFFICE
CHARGE DESK
STACKS
MACHINE ROOM
DISPLAY WINDOWS
CONFERENCE ROOM
OFFICE
RESEARCH
TESTING
CONFERENCE ROOM
MATH
SCIENCE
SECONDARY
ART DISPLAY
LANGUAGE ARTS
SOCIAL STUDIES
SPECIAL EDUCATION
BUSINESS EDUCATION
INDUSTRIAL ARTS
OFFICE
STORAGE
MUSIC
ACTIVITIES AREA PHYSICAL EDUCATION DRAMATICS, SPEECH, ETC.
HOME EC.
STORAGE
KINDERGARTEN
NERAL ADMINISTRATION CENTER
ADMINISTRATION GENERAL OFFICE
EXEC. DINING
EXECUTIVE DIRECTOR
SEC.
DIRECTOR SPEC. CURRIC.
DIR. COMM.
SEC.
WORK ROOM
REST ROOMS
CONF
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PROJ
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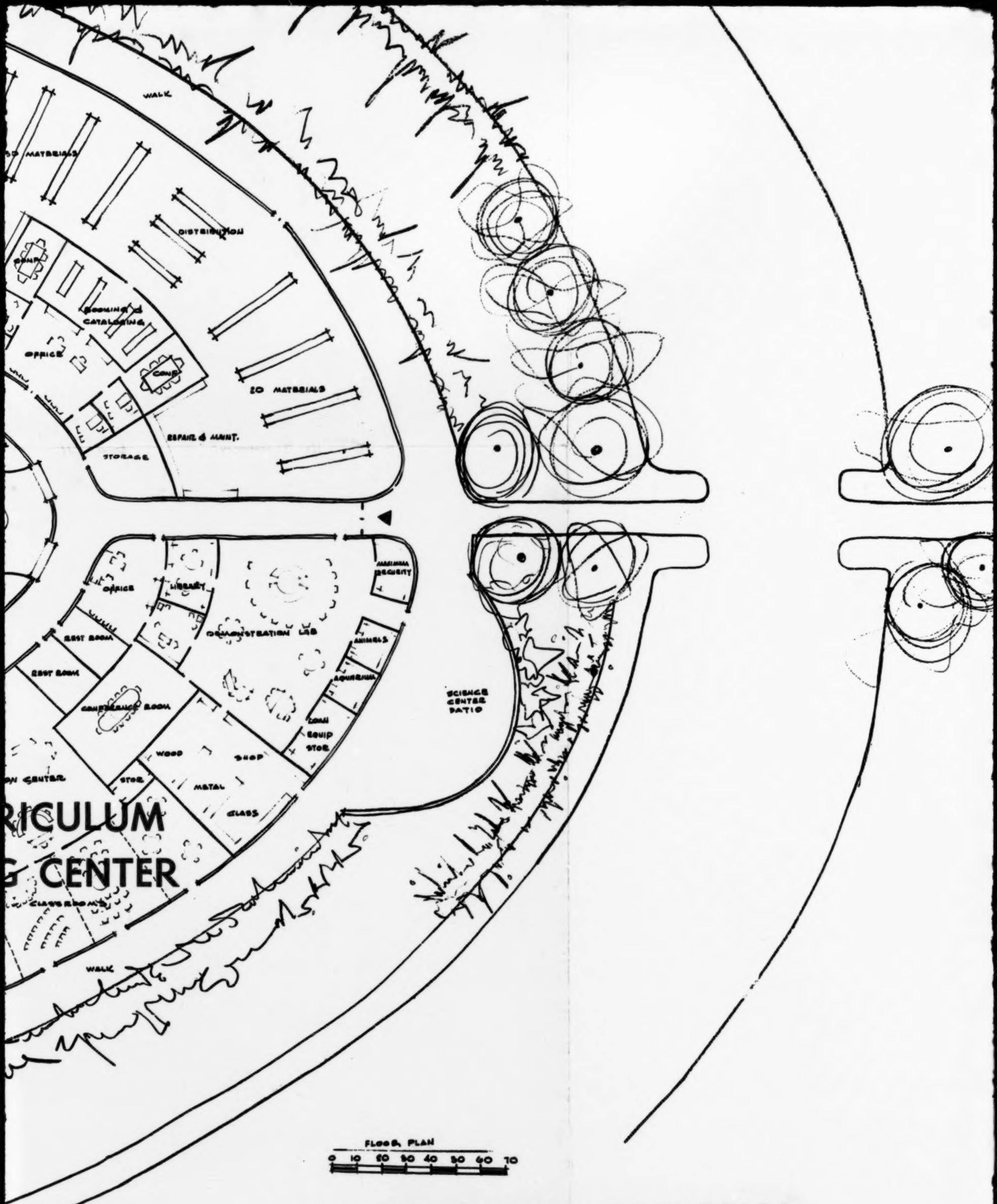
CONF
WORK RM
WORK RM
SEC.
SEC.
KITCHEN
KIT STO
WALK
SPECIAL CURRI
AND LEARNING
PSYCHOLOGICAL & GUIDANCE OFFICES
OFFICE
DEMONSTRATION
WAITING
PSYCHOLOGIST
WORK RM
PSYCHOLOGIST
GROUP THERAPY
PSYCHOLOGIST
SEC.
PLAY
OBSERV.
PLAY
SEC.
CONF
PARKING


WALK
MATERIALS
DISTRIBUTION
CONF
BOOKING & CATALOGING
OFFICE
CONF
2D MATERIALS
REPAIR & MAINT.
STORAGE
MAXIMUM SECURITY
OFFICE
LIBRARY
DEMONSTRATION LAB
ANIMALS
REST ROOM
REST ROOM
AQUARIUM
SCIENCE CENTER PATIO
CONFERENCE ROOM
LOAN EQUIP STOR
WOOD
SHOP
N CENTER
STOR
METAL
GLASS
RICULUM
G CENTER
CLASSROOMS
WALK
FLOOR PLAN
0 10 20 30 40 50 60 70

A PROPOSED REGIONAL COMMUNICATIONS CENTER

U. S. OFFICE OF EDUCATION, DEPARTMENT OF HEALTH, EDUCATION & WELFARE
JACK TANZMAN — PRINCIPAL INVESTIGATOR
SHAVER & CO. — ARCHITECTS
6/6/64

MASTER PLANS: The following master plan includes all of the areas shown in the specifications:

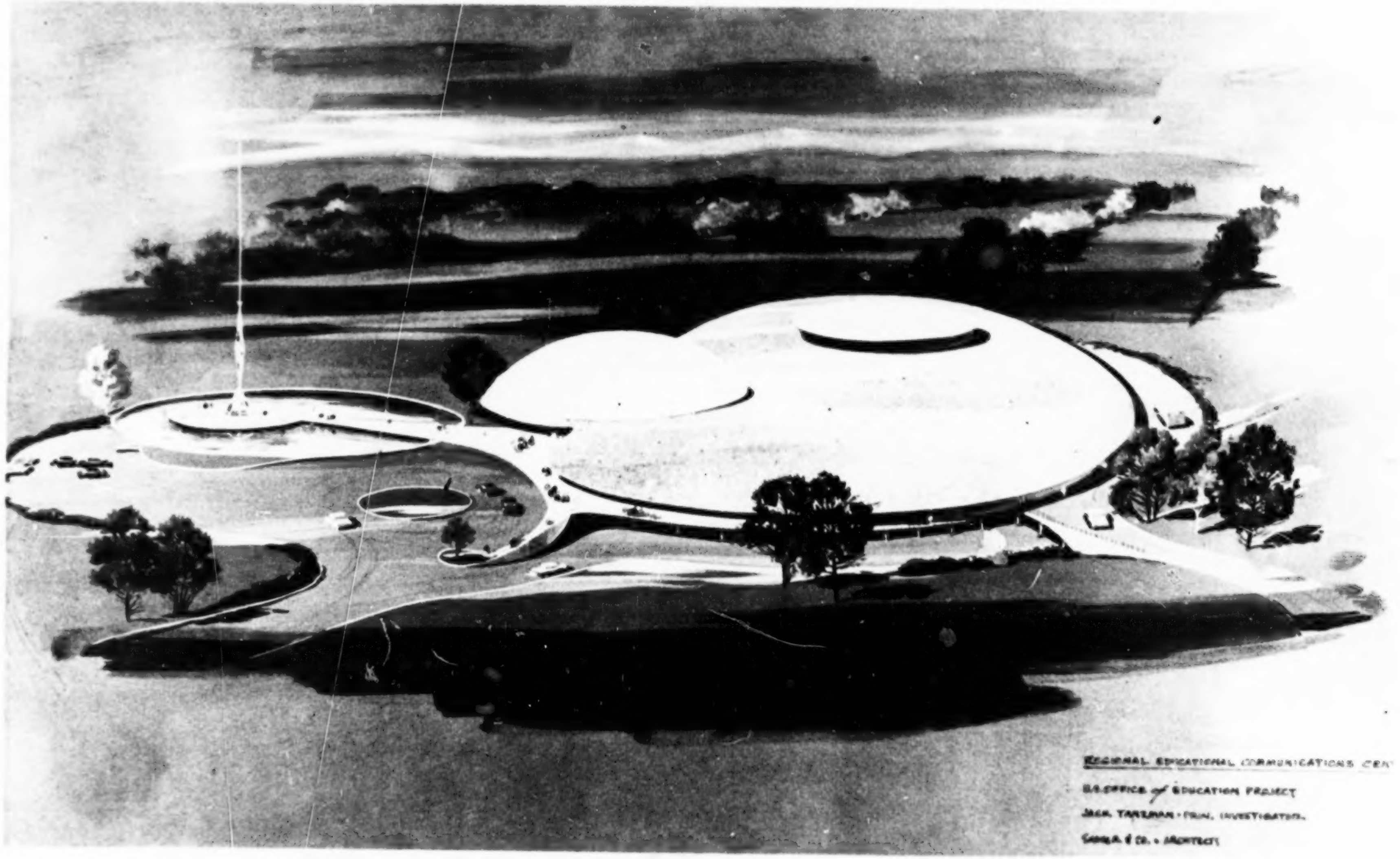
1. Total Building Area: 288,000 square feet.
2. Structural System: Reinforced concrete, Type 1 construction.
3. Mechanical System: Complete year-round air-conditioning. Water, gas, compressed air and waste piping disbursed throughout building with flexible connections permitting the relocation of equipment requiring these connections.
4. Electrical: Underground network of wireways permitting electrical connections for any and all equipment and for relocating all equipment that requires electrical power.
5. Site: Minimum site requirement, 10 acres (unless a multi-story structure is considered).
6. Estimated Cost: Costs would vary depending upon the location and construction of the center.

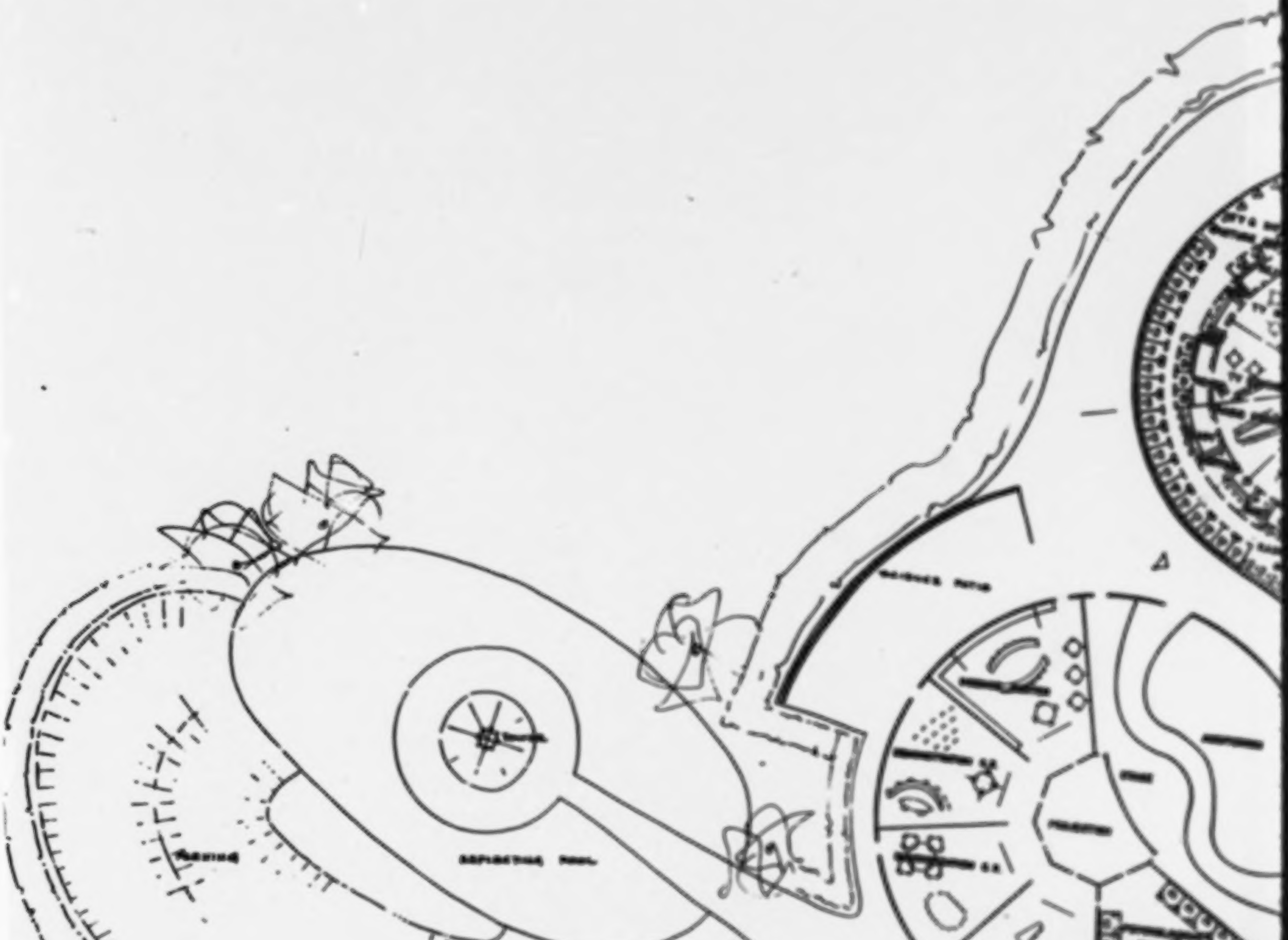
Breakdown of Six Major Areas:

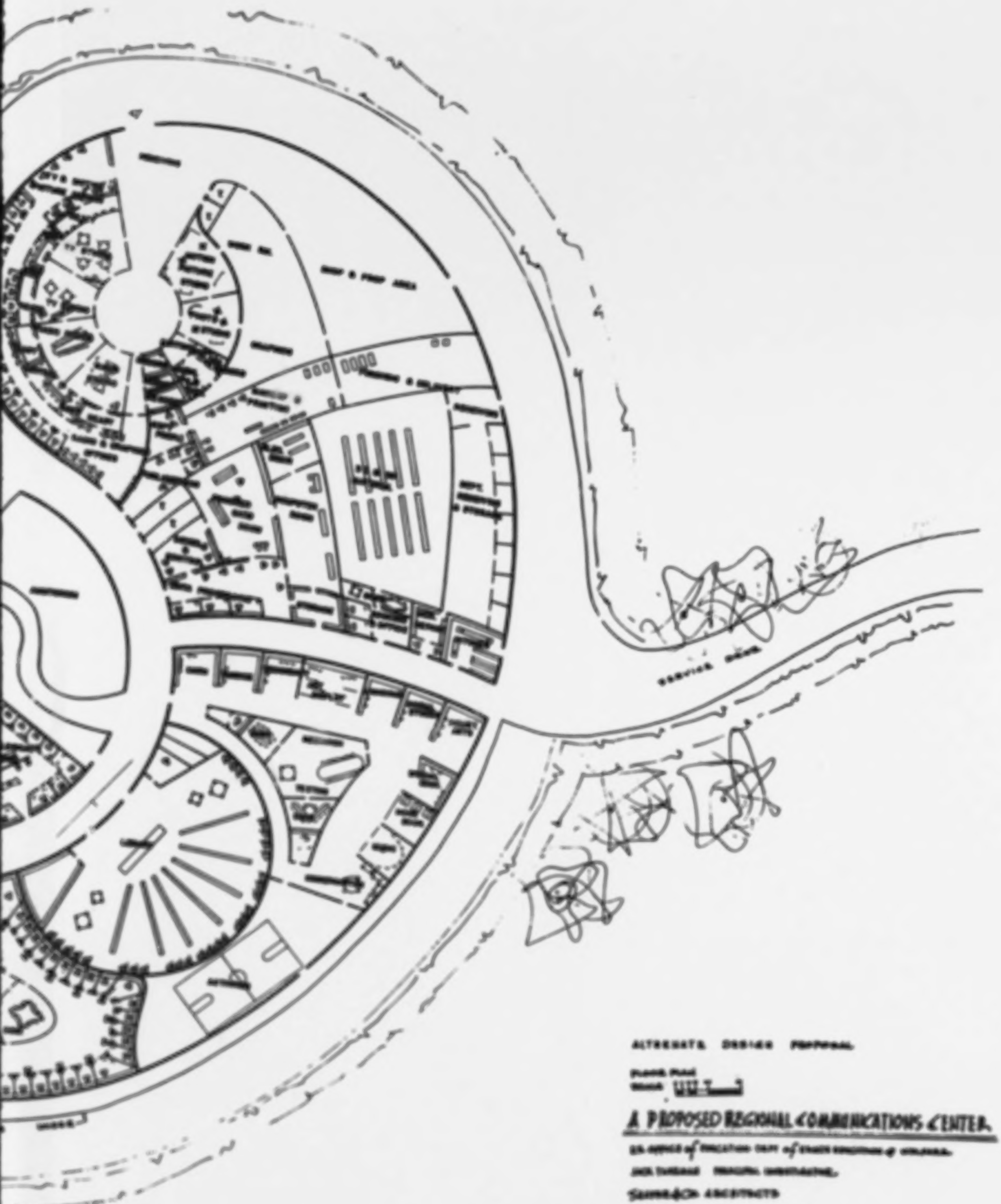
1.	Mass Communications	80,540 sq. ft.
2.	Administration	30,200 sq. ft.
3.	Psychological, Demonstration and Science	37,400 sq. ft.
4.	Receiving, Equipment Evaluation, IMC	31,400 sq. ft.
5.	Graphics, Printing, Data Processing	28,520 sq. ft.
6.	Resource, Research, Curriculum Development	48,856 sq. ft.
	Total	256,916 sq. ft.

The total area in the building as a whole is 288,000 square feet. The additional space not accounted for above is in corridors, lobby, etc.

Alternate Design


REGIONAL EDUCATIONAL COMMUNICATIONS CEN
U.S. OFFICE of EDUCATION PROJECT
JACK TANZMAN · PRIN. INVESTIGATOR.
SHOLA & CO. · ARCHITECTS


PARKING
REFLECTING POOL
DRIVE



ALTERNATE DESIGN PROPOSAL

FLOOR PLAN
SCALE

A PROPOSED REGIONAL COMMUNICATIONS CENTER

US OFFICE of EDUCATION [illegible] of [illegible]

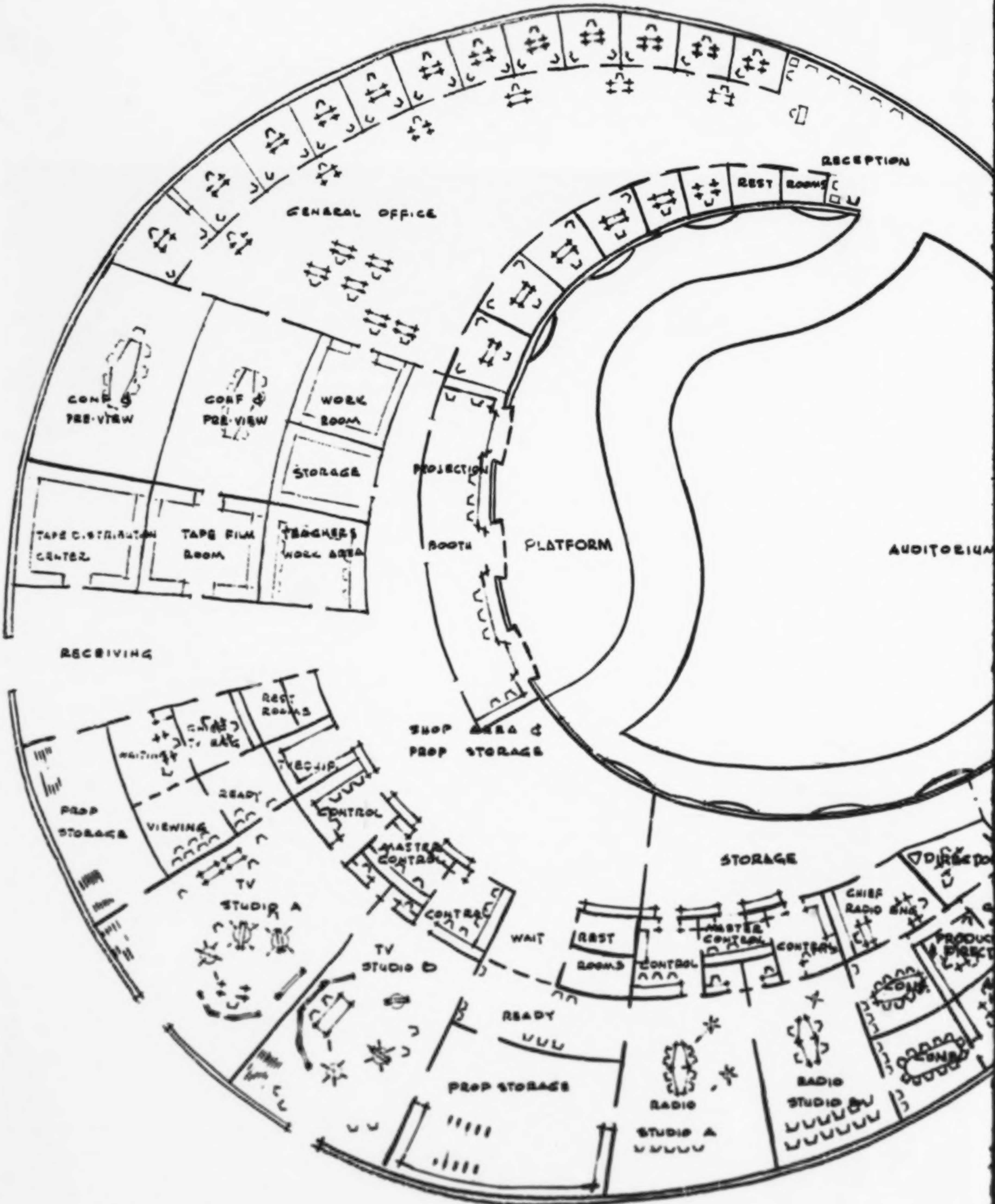
[illegible] PRINCIPAL INVESTIGATOR

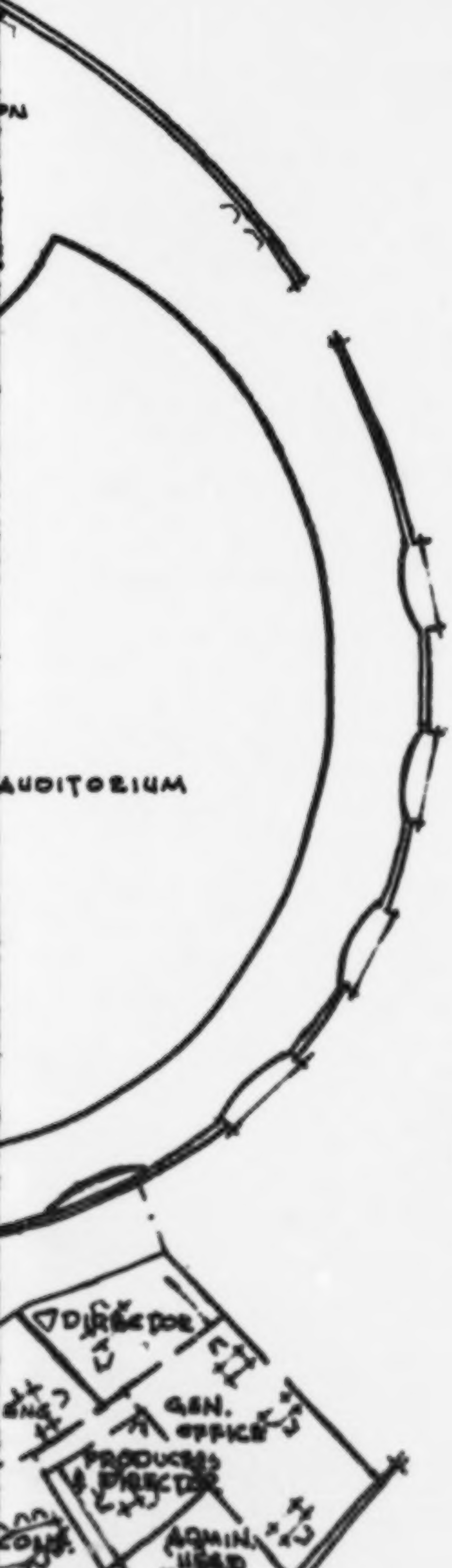
[illegible] ARCHITECTS

[illegible]

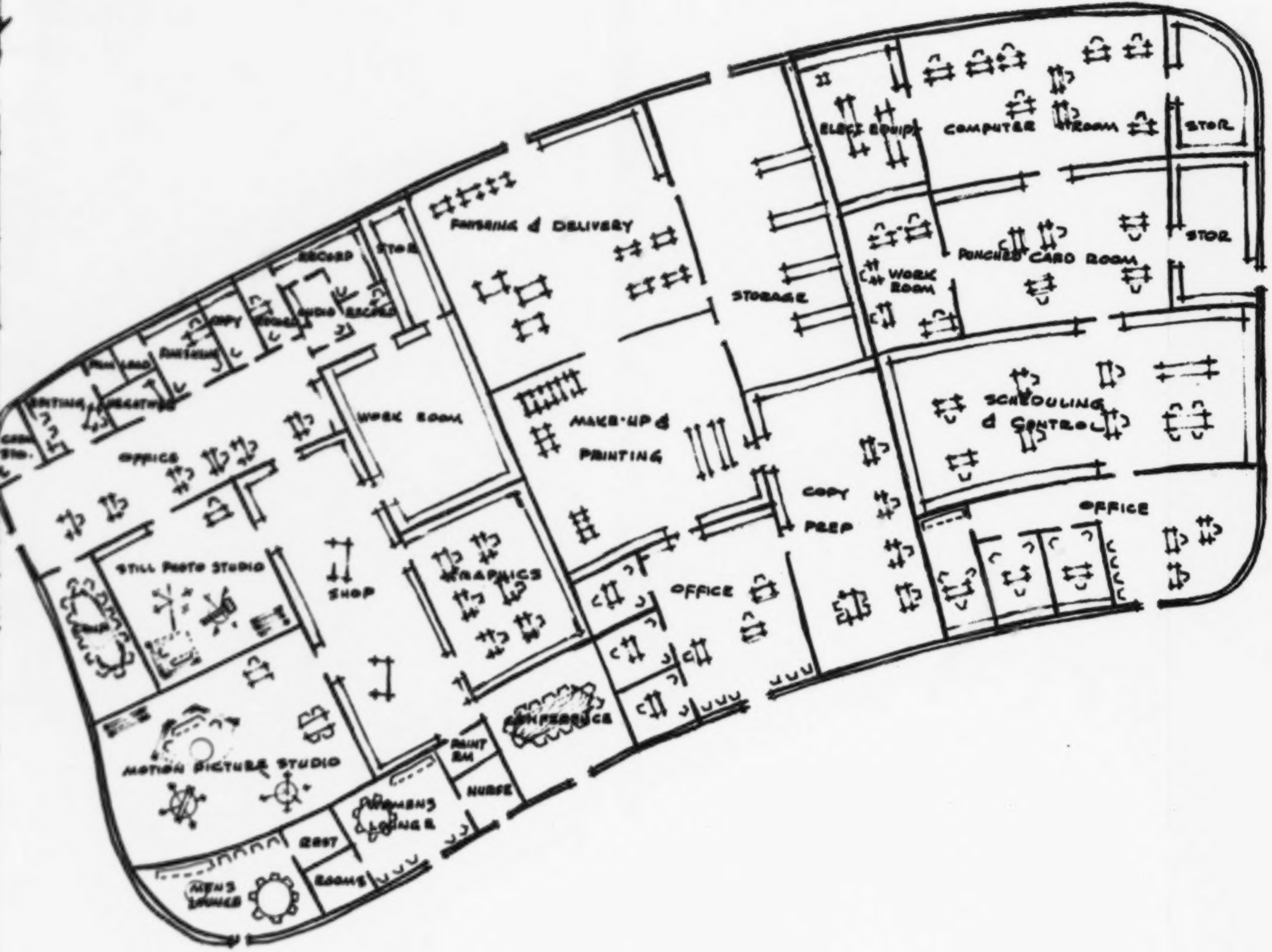
REGIONAL EDUCATIONAL COMMUNICATIONS CENTER

Specifications of Module Designs

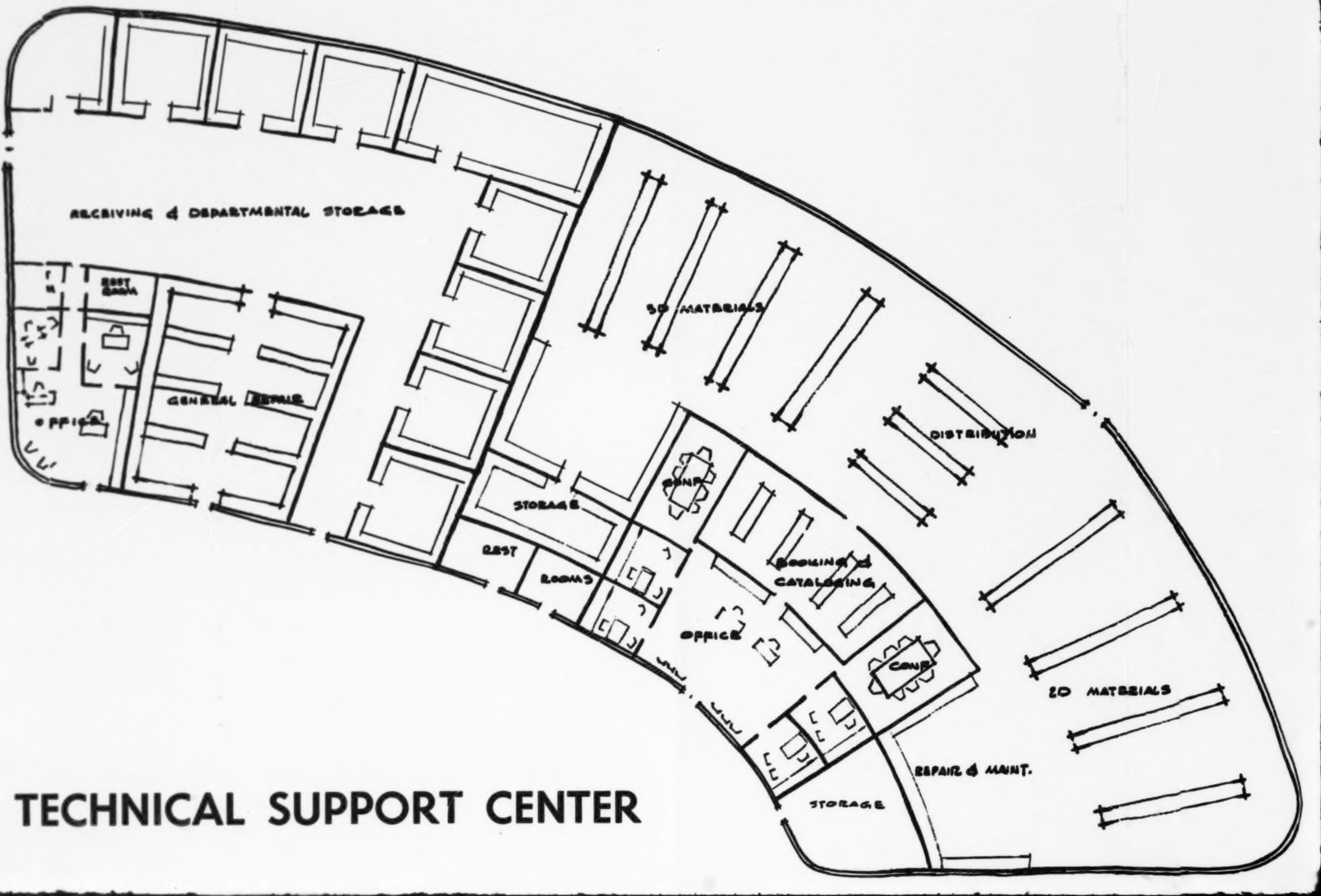

GENERAL OFFICE
RECEPTION
REST ROOMS
CONF & PRE-VIEW
CONF & PRE-VIEW
WORK ROOM
STORAGE
PROJECTION BOOTH
PLATFORM
AUDITORIUM
TAPE DISTRIBUTION CENTER
TAPE FILM ROOM
TEACHERS WORK AREA
RECEIVING
REST ROOMS
SHOP AREA & PROP STORAGE
WAITING
TV REG
TV CHIP
READY
CONTROL
PROP STORAGE
VIEWING
MASTER CONTROL
TV STUDIO A
CONTROL
WAIT
REST ROOMS
CONTROL
MASTER CONTROL
CONTROL
STORAGE
CHIEF RADIO ENG
TV STUDIO B
READY
PROP STORAGE
RADIO STUDIO A
RADIO STUDIO B
CONF
CONF


AUDITORIUM
DIRECTOR
GEN. OFFICE
PRODUCER & DIRECTOR
CONF.
ADMIN. HEAD
CONF.

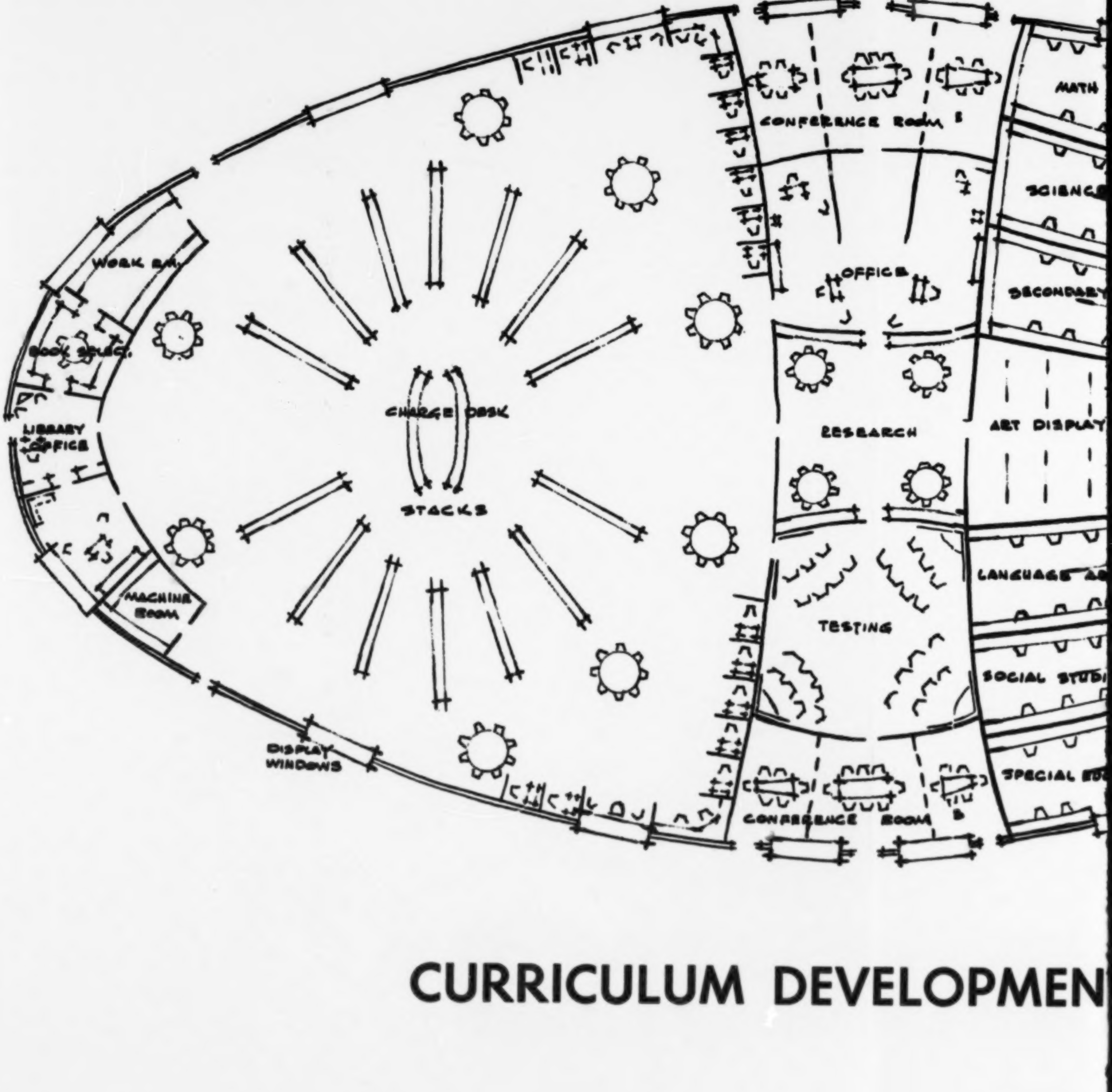
MASS COMMUNICATIONS CENTER


STOR
STOR
ELEC. EQUIP.
COMPUTER ROOM
WORK ROOM
PUNCHED CARD ROOM
SCHEDULING & CONTROL
OFFICE
STORAGE
COPY PREP
OFFICE
FINISHING & DELIVERY
MAKE-UP & PRINTING
CONFERENCE
GRAPHICS
WORK ROOM
SHOP
PAINT RM
NURSE
WOMENS LOUNGE
REST ROOMS
MENS LOUNGE
MOTION PICTURE STUDIO
STILL PHOTO STUDIO
OFFICES
RECORD
STOR
COPY
AUDIO
RECORD
EDITING

TECHNICAL SUPPORT CENTER


RECEIVING & DEPARTMENTAL STORAGE
REST ROOM
OFFICE
GENERAL REPAIR
3D MATERIALS
DISTRIBUTION
STORAGE
CONF
REST
ROOMS
BOOKING & CATALOGING
OFFICE
CONF
2D MATERIALS
REPAIR & MAINT.
STORAGE

TECHNICAL SUPPORT CENTER


MATH
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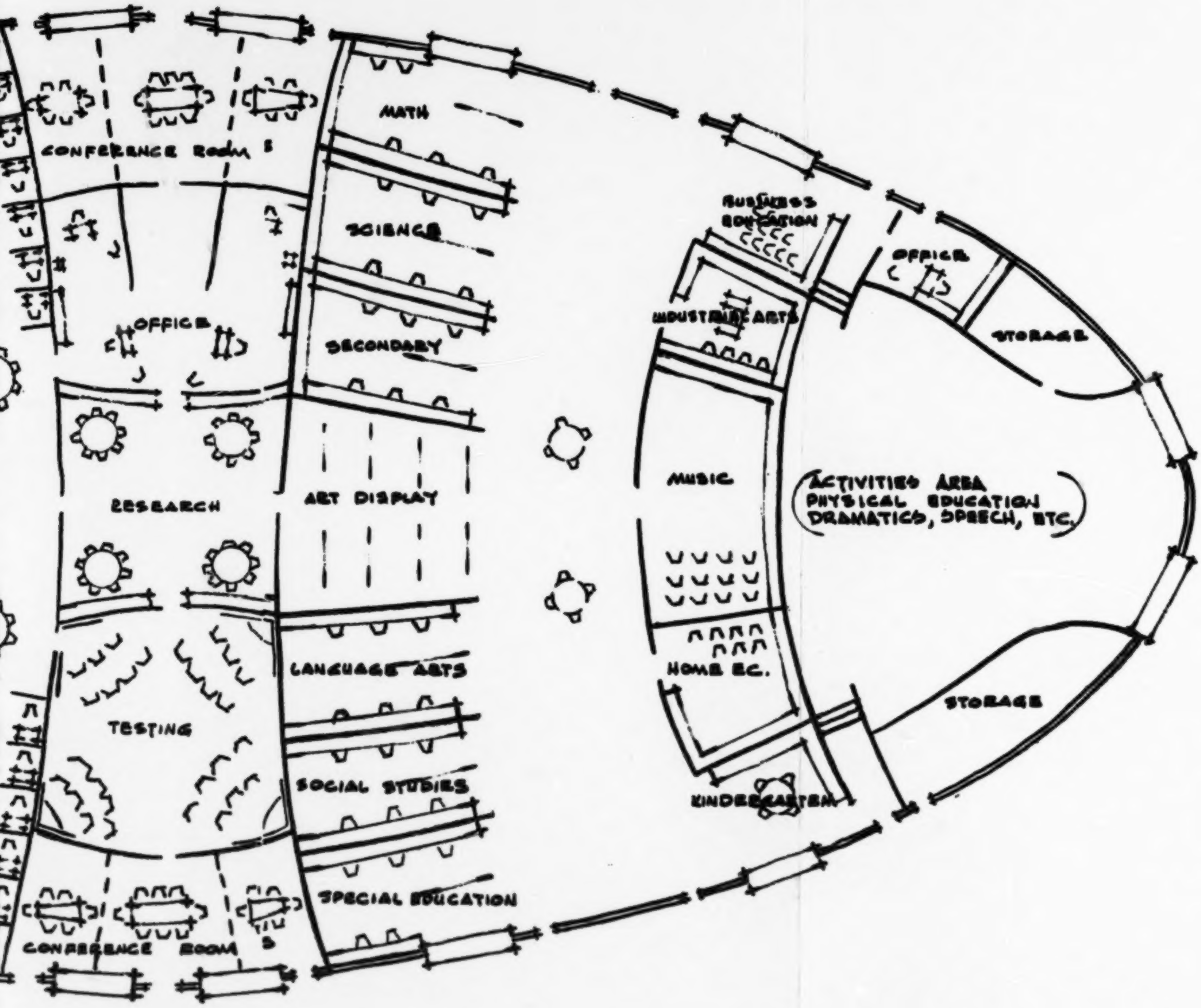
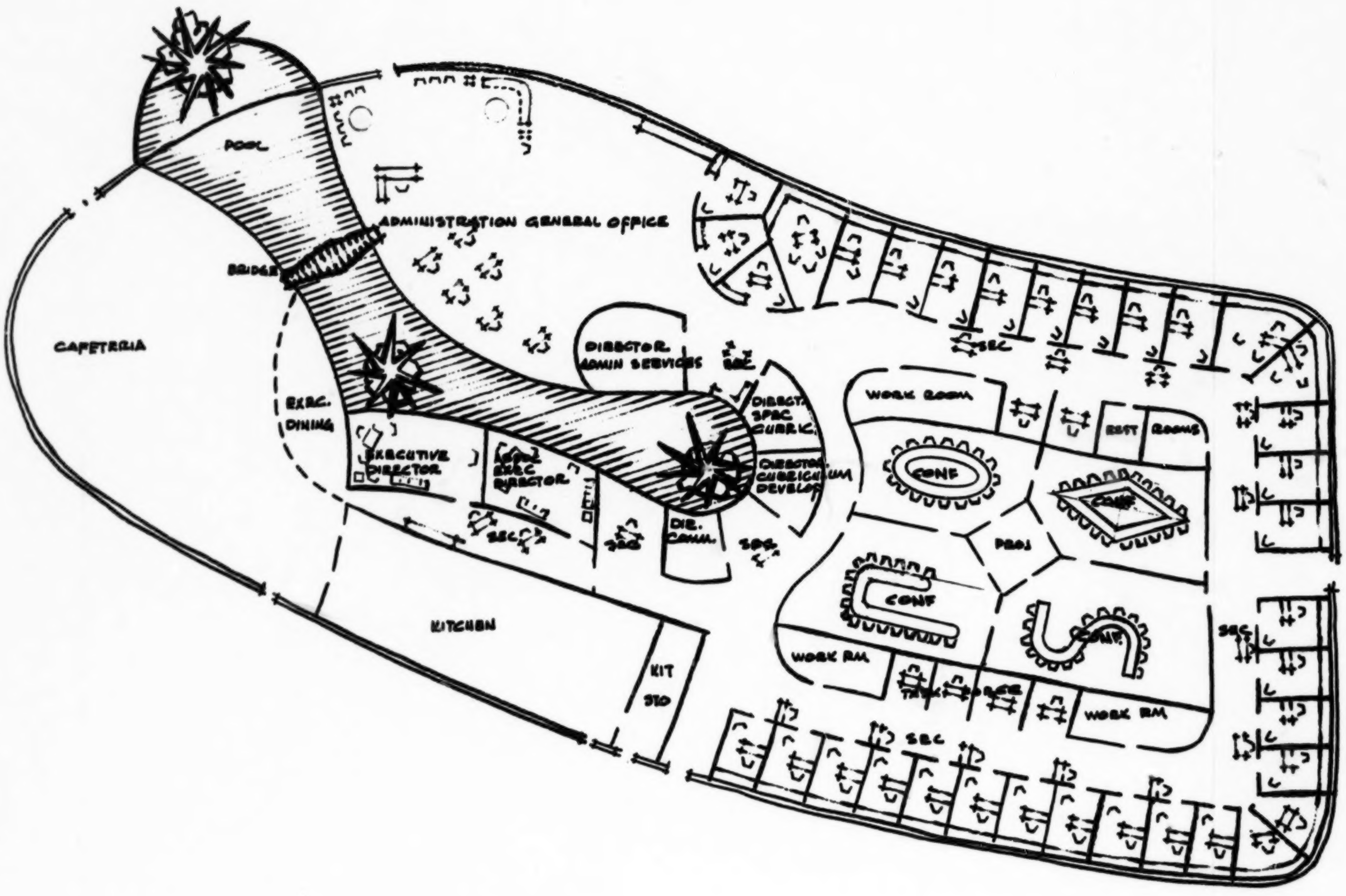
SCIENC
WORK RM.
BOOK SELEC.
OFFICE
SECONDARY
CHARGE DESK
LIBRARY OFFICE
RESEARCH
ART DISPLAY
STACKS
LANGUAGE A
MACHINE ROOM
TESTING
SOCIAL STUDI
DISPLAY WINDOWS
SPECIAL ED
CONFERENCE ROOM
B

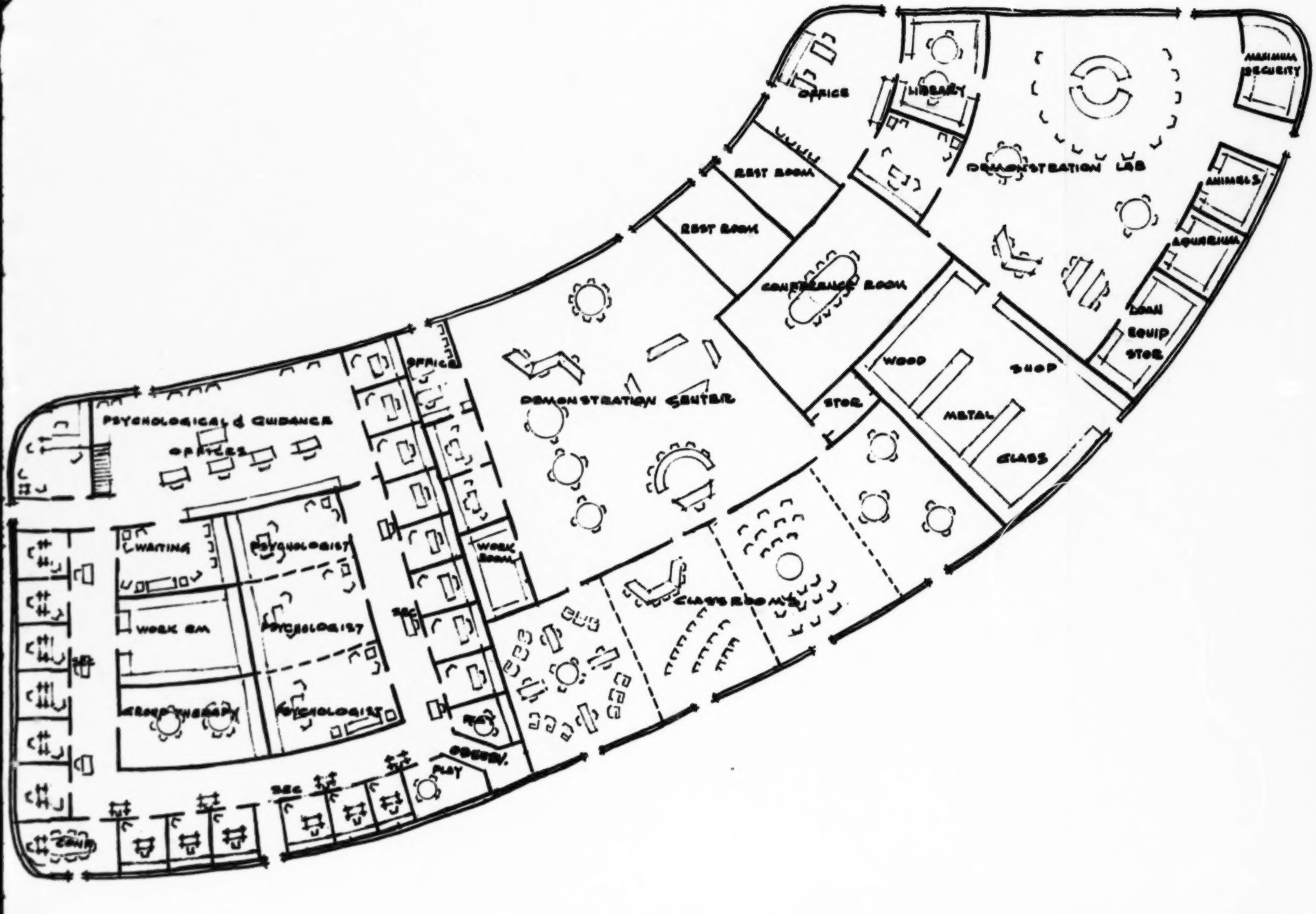
CURRICULUM DEVELOPMEN


CONFERENCE ROOM
MATH
SCIENCE
OFFICE
SECONDARY
RESEARCH
ART DISPLAY
LANGUAGE ARTS
TESTING
SOCIAL STUDIES
SPECIAL EDUCATION
CONFERENCE ROOM
BUSINESS EDUCATION
OFFICE
INDUSTRIAL ARTS
STORAGE
MUSIC
ACTIVITIES AREA
PHYSICAL EDUCATION
DRAMATICS, SPEECH, ETC.
HOME EC.
STORAGE
KINDERGARTEN

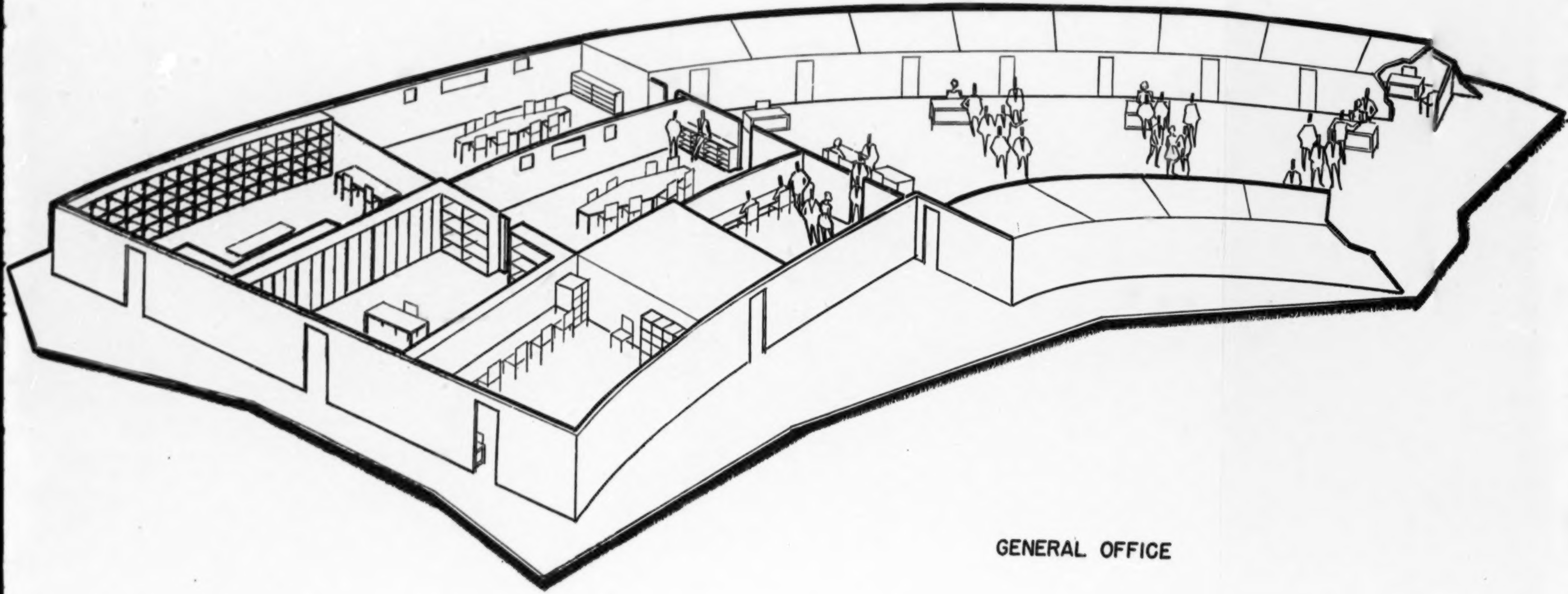
M DEVELOPMENT CENTER


POOL
ADMINISTRATION GENERAL OFFICE
BRIDGE
CAFETERIA
DIRECTOR ADMIN SERVICES
SEC
SEC
DIRECT. SPEC CURRIC.
WORK ROOM
REST ROOMS
EXEC. DINING
EXECUTIVE DIRECTOR
ASSOC. EXEC DIRECTOR
DIRECTOR CURRICULUM DEVELOP.
CONF
CONF
PROJ
SEC
SEC
DIR. COMM.
SEC
CONF
CONF
SEC
KITCHEN
KIT STO
WORK RM
TASK FORCE
WORK RM
SEC

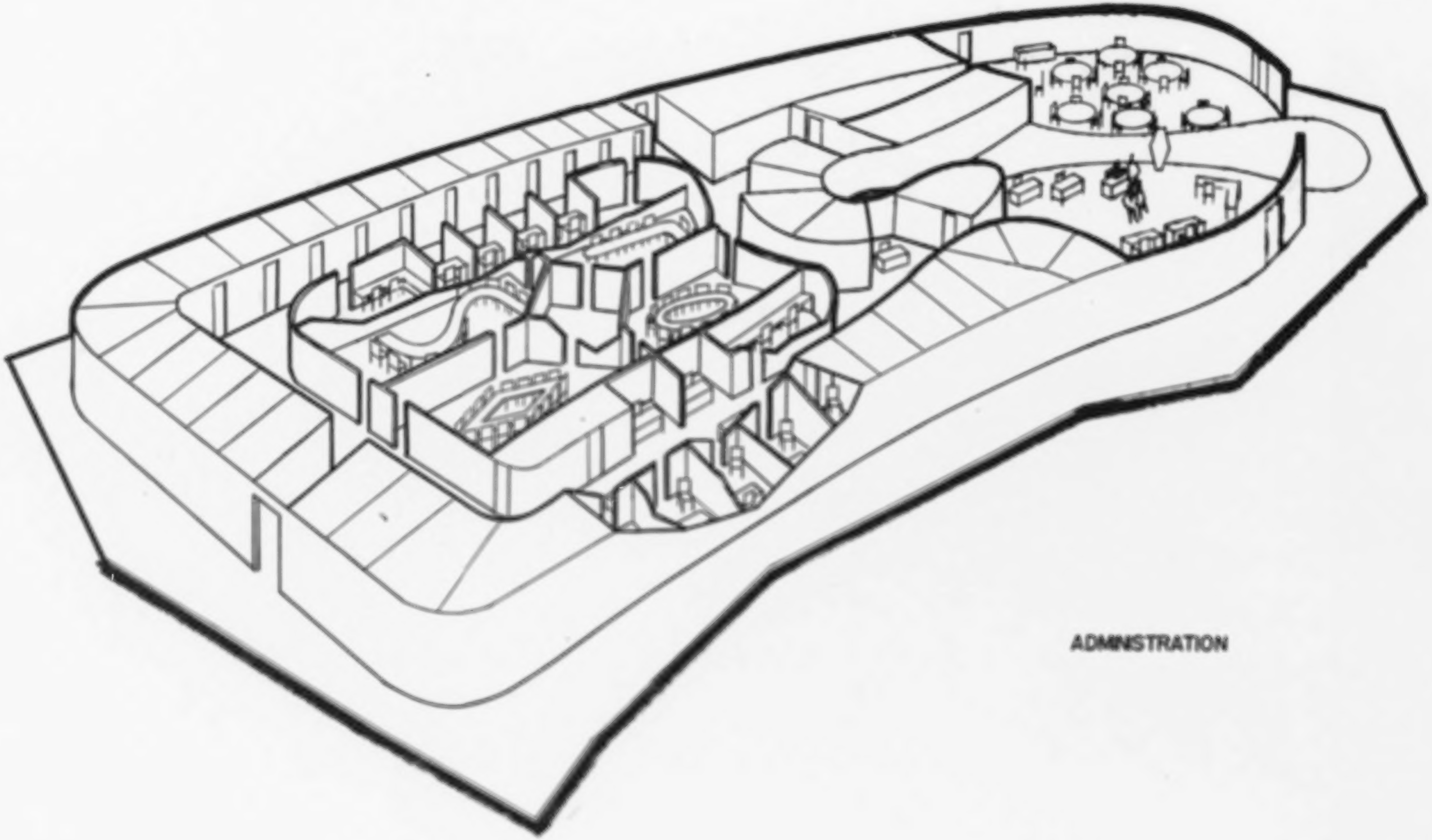
GENERAL ADMINISTRATION CENTER


MAXIMUM SECURITY
OFFICE
LIBRARY
DEMONSTRATION LAB
ANIMALS
AQUARIUM
LOAN EQUIP STOR
REST ROOM
REST ROOM
CONFERENCE ROOM
WOOD
SHOP
METAL
GLASS
STOR
OFFICE
DEMONSTRATION CENTER
PSYCHOLOGICAL & GUIDANCE OFFICES
WAITING
PSYCHOLOGIST
WORK RM
PSYCHOLOGIST
GROUP THERAPY
PSYCHOLOGIST
WORK ROOM
SEC
CLASSROOMS
PLAY
OBSERV.
PLAY
SEC
CONF

SPECIAL CURRICULUM AND LEARNING CENTER



GENERAL OFFICE



ADMINISTRATION

CURRICULUM DEVELOPMENT

I. DESCRIPTION OF EDUCATIONAL USAGE

The regional center will provide consultant services to the individual districts in various curriculum areas. The region will be staffed with a general curriculum expert and with persons with competencies in specialized areas (these may be hired on a consultancy basis).

II. SPACE REQUIREMENTS

It must be pointed out in the space requirements that these are examples of demonstration facilities:

Mathematics Rooms	1,300	sq. ft.
Secondary Schools Room	1,300	" "
Music Department	1,300	" "
Physical Education	2,750	" "
Science Demonstration labs	2,000	" "
Special Education	700	" "
Art Display and Workroom	3,500	" "
Social Studies	1,400	" "
Language Arts	1,700	" "
Kindergarten	1,000	" "
Industrial Arts	850	" "
Home Economics	800	" "
Conference Room	675	" "
Total square footage	19,275	

III. EQUIPMENT REQUIREMENTS

Certain specialized equipment will be needed for special presentations and should be part of the equipment and materials of the demonstration area. For example:

A. Mathematics

1. Equipment needed:

Overhead projector - ceiling mounted screen
Access to facilities for making transparencies
Blackboard (large area)

A. 1. (cont'd.)

Math typewriter
Models - charts - teaching devices - easels
Table space (display tables - 6)
Desk calculator
Portable digital computer (this area in Mathematics is now upon us)

2. Display Space:

Much as possible - large room 30' x 30'
Extensive library - books should be displayed so they may be easily examined

B. Music

1. Equipment Needed:

Music console including-
- 2 Ampex 601-2 tape recorders
- 2 U47 Telefunken microphones (adjustable ceiling mounts)
- 1 Stereo record player
- 1 Multiplex FM Radio
- Stereo Multiple Speakers
- Strobo Conn (electronic tuner)
- Dynalevel (volume indicator)
- 4 Beam oscilloscope
- 3 Signal Generators
- Phase reversal
- Sum & difference translators
- Sound diffuser walls and ceiling treatment
- Music typewriter
- Photo copier
- 15 4-drawer filing cabinets
- 2 pianos
- Record and tape libraries
- Music library
- Book library

2. Display Space:

Display racks for music, records and photos.
Display cases for instruments used in a classroom.

C. Physical Education

1. Equipment Needed:

Projectors: 16mm sound with built-in speakers, slide "analyst" (slow motion), loop film (cartridge type, 8mm) 8mm silent overhead
Projection screen
Piano, miniature
Record player - variable speed
Easel
Anatomical Models
Skeleton
Bunsen burner, test tubes, lab supplies
Cord boards - wall type and "octapus pole-type - wedged ceiling to floor
Health charts
Rolling step stool
Tumbling mats, 4' x 8' and individual mats, 2' x 4'
Anthropometrical equipment - dynomometers, etc.
Ball inflator with gauge
Balls, hoops, skipping ropes, bean bags
Hockey sticks, pucks
Clip boards
Stretcher
Batons
Percussion instruments - improvised
Sample gym costumes
Sample protective equipment
First-aid kits for instructional classes
Portable score board
Sample track and field items
Trophies
Stationery
Printed and mimeographed materials for distribution
Dance costumes
Typewriter and dictaphone
Desks, chairs, wastepaper baskets
Object of art - athletic sculpture, etc.

C. 2. Display Space:

5' x 10' x 3'	Individual and squad tumbling mats, mounted on dolly, specify overhead door for this. Space over 3' level may be used for other storage. Vertical mat track not recommended.
11' x 1'	Book shelves, magazine rack and storage. Pamphlets stored by subject in vertical file boxes.
11' x 2'6"	Four drawer files (7)
17' x 8'	Storage of small symnastic supplies and new items of equipment, also out-of-season and dead storage.
10' x 24"	Coat storage
6' x 24"	Projection equipment - projectors on dolly - library of films on doors and overhead shelves.
14' x 2'	Counter with lab sink and storage for health experiments and models under.
7' x 2'8"	Alcove for piano, record player, music and records.
14' x 1'	Presentation unit, complete with sliding 4' x 4' panels containing magnetic boards, felt boards, peg boards, cork boards, chalk boards. Storage bins underneath for portfolios of posters, chalk brushes, magnets. Indirect lighting.

D. Art

1. Equipment Needed:

Ceramic kiln
Enamel kiln
Spray booth
Large paper cutter
Tracing table (4 posts) (fluorescent lights)
4' x 7' work table with storage and drawers underneath-on castors
Electric clock
Steel flat filing cabinets, 5 drawer 50" x 38" x 2" to store flat
art work

D. 1. (cont'd.)

Storage for 3 dimensional craft work
Storage for display panels and display stands
Open shelf storage (steel)
Storage for display mounting cards
Folding tables and chairs
Movable platform 12' x 12'
Projection facilities
Wired for sound and microphones

2. Display Space:

Display gallery 80' x 28' x 9' with built-in display cases at ends
Movable display panels 4' x 8'

E. French

1. Equipment Needed:

Miniature language laboratory with at least 10 positions listen, repeat, record facilities; 3 source input
Record player
Another tape recorder with dual head
One movie projector with daylight screen
One filmstrip projector
At least 10 booths that can be converted to standard table-like desk
Cupboard space for storing tapes, large tableaux, films and filmstrips
Stacking chairs (1 dozen)
Filing cabinet
Standard office equipment

2. Display Space:

One complete wall 21' - upper part to display large tableaux series - lower space wall to wall cupboard with sliding doors and good hard surface for displaying equipment, programmed materials, etc.

F. Language Arts

1. Equipment Needed:

Books - those on the course of study and supplemental for the classroom
Professional books to have at hand - in addition to those in the professional library
Courses of study
Tape recorders, record players

2. Display Space:

Two large bulletin boards
A display board for periodicals, and as much bookshelf space as is possible

G. Industrial Arts

1. Equipment Needed:

Desk - D.P. Top 30" x 60"
Filing cabinet - 3 D. cap. size
Teachers swivel armchair
One straight armchair
Demonstration table - wired - transite top - vises - cupboards below
Projection screen
Minimum small equipment - demonstrations are carried out in nearby school having permanent equipment

2. Display Space:

Counter along one side and one end of office alcove with glass doored shelves above and a bulletin board on the other side wall.

One display case for this subject in main rotunda along with cases for other areas if these are to be used.

H. Home Economics

1. Equipment Needed:

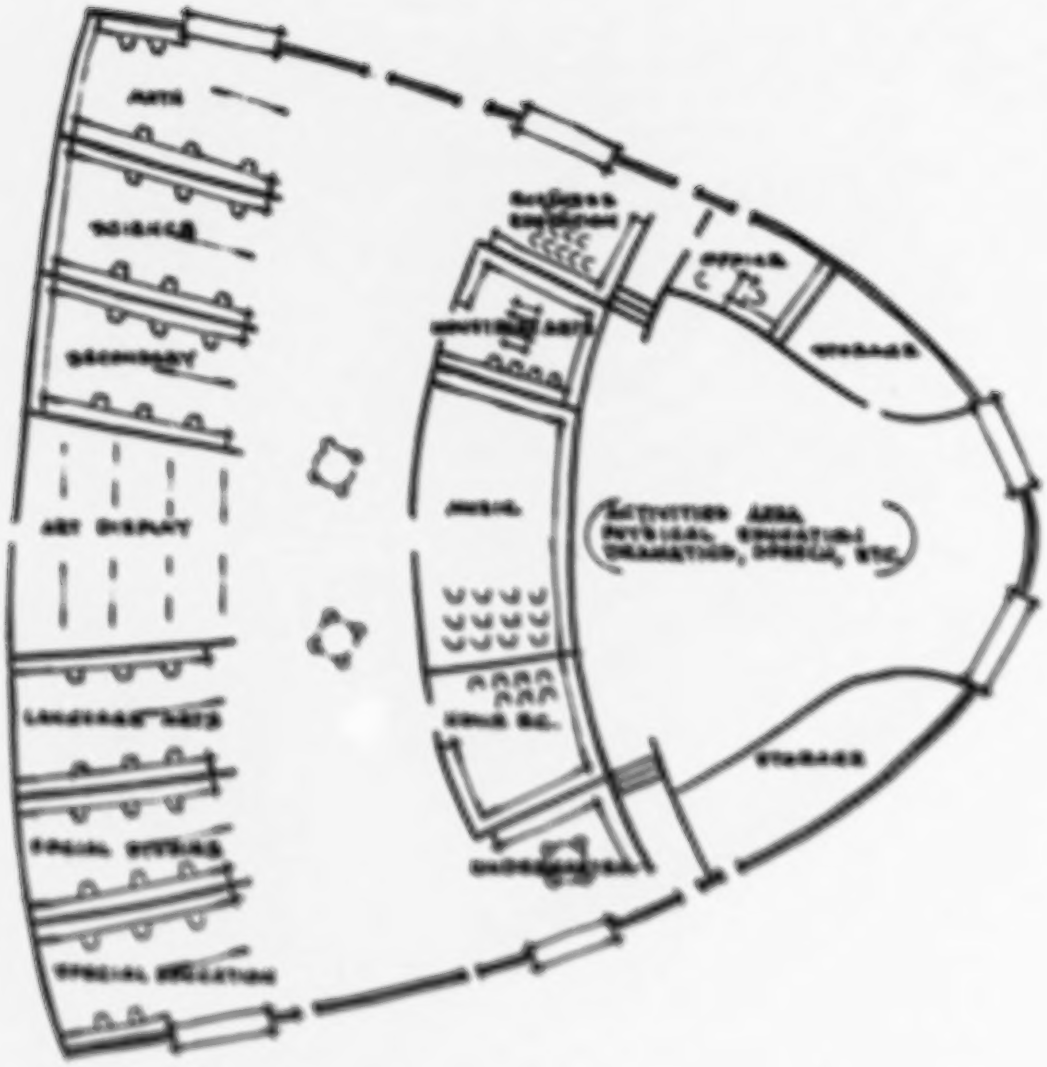
2 built-in filing cabinets
1 bookcase
Small demonstration kitchen - refrigerator, 30" range
Dishwasher, and assortment of kitchen utensils
Sewing machine - console model
Built-in screen for visual aids
2 blouse and dress stands with 24" to 48" extender rods
3-way displayer for garments
1 desk
2 chairs

2. Display Space:

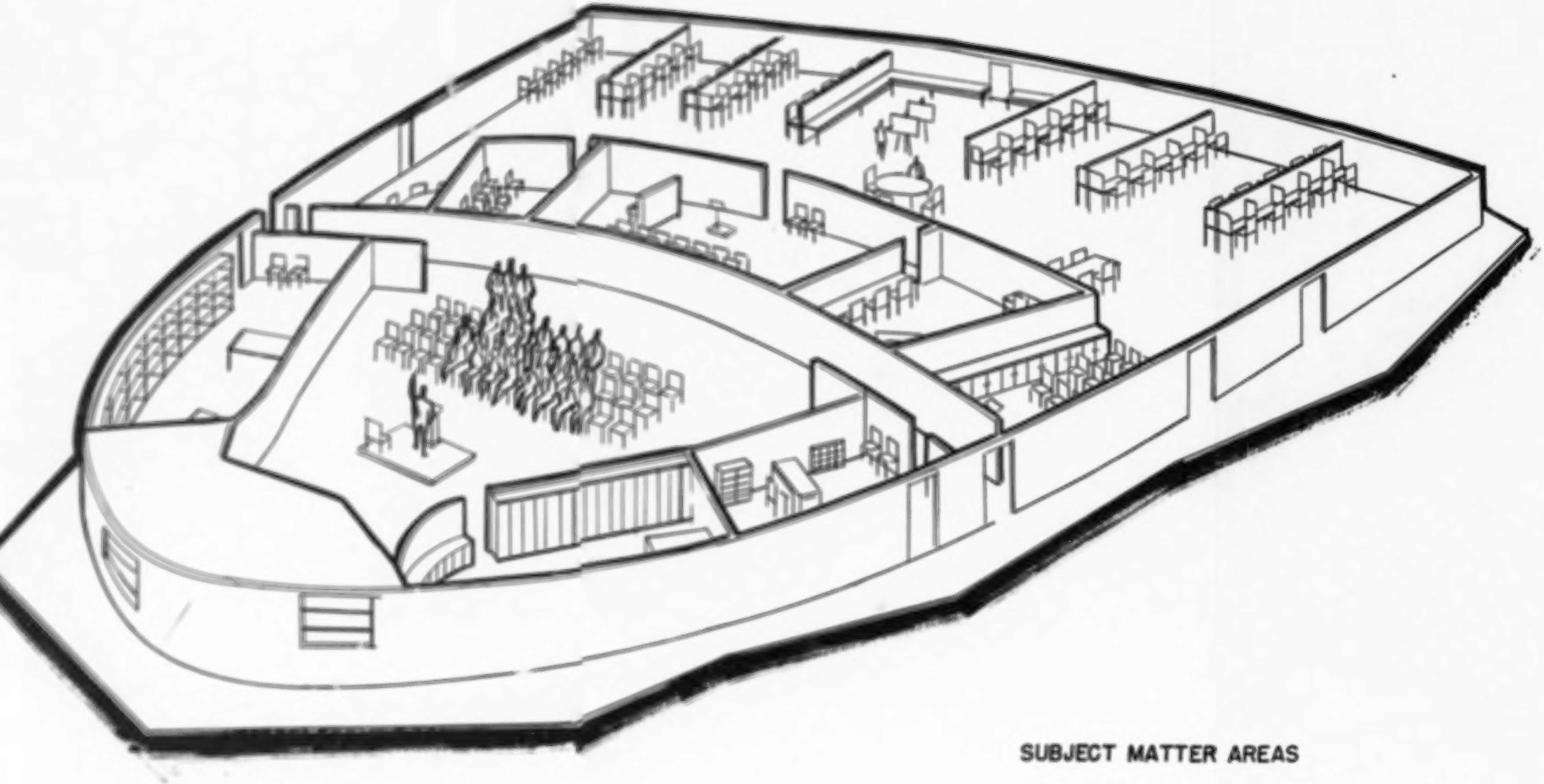
2 display cases with locks 6' x 4' x 15"
Floor space 20' x 28'

IV. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

There would be a coordinator of all curricular activities, and under him would be subject matter specialists and a clerical pool. These specialists would be in all of the above-mentioned areas.


ARTS
SCIENCE
GEOGRAPHY
ART DISPLAY
LANGUAGE ARTS
SOCIAL STUDIES
SPECIAL EDUCATION
BUSINESS EDUCATION
INDUSTRIAL ARTS
MUSIC
HOME EC.
OFFICE
STORAGE
ACTIVITIES AREA
PHYSICAL EDUCATION
DRAMATICS, SPEECH, ETC.
STORAGE

CURRICULUM DEVELOPMENT DEPARTMENT



SUBJECT MATTER AREAS

RESEARCH DEPARTMENT

I. DESCRIPTION OF EDUCATIONAL USAGE

A great deal of abstract research is being done right now by colleges and universities, federal and state governments, and a large number of interested foundations. An education research center would do some research on its own but, as conceived, it would be much more directly involved in taking research that had been done previously and seeing how it could be applied to actual local situations.

II. SPACE REQUIREMENTS

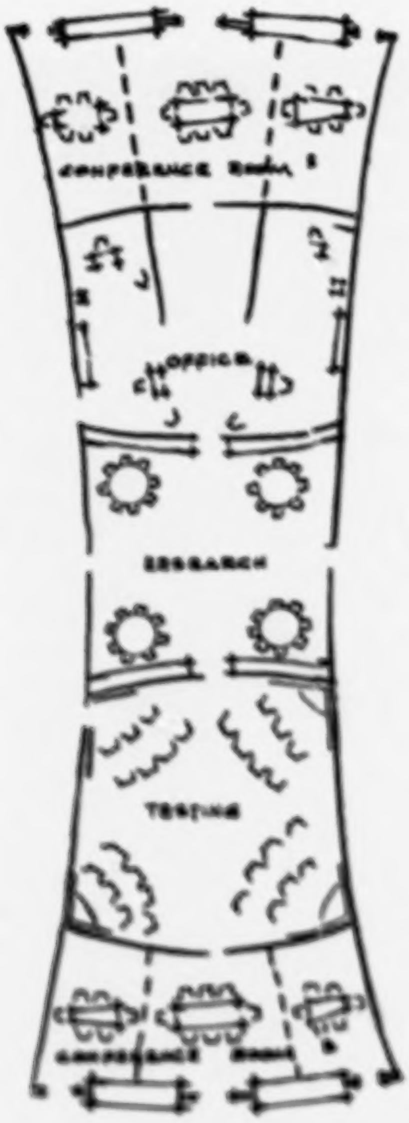
Offices: Director of Research (14' x 20')	280 sq. ft.
Research Assistant (14' x 20')	280 " "
General Office (14' x 20')	280 " "
Records Room (20' x 20')	400 " "
Testing (20' x 24')	480 " "
Microfilm Reading Room (14' x 20')	280 " "
Conference Rooms (2 - 675 sq. ft. each)	1,350 " "

III. EQUIPMENT REQUIREMENTS

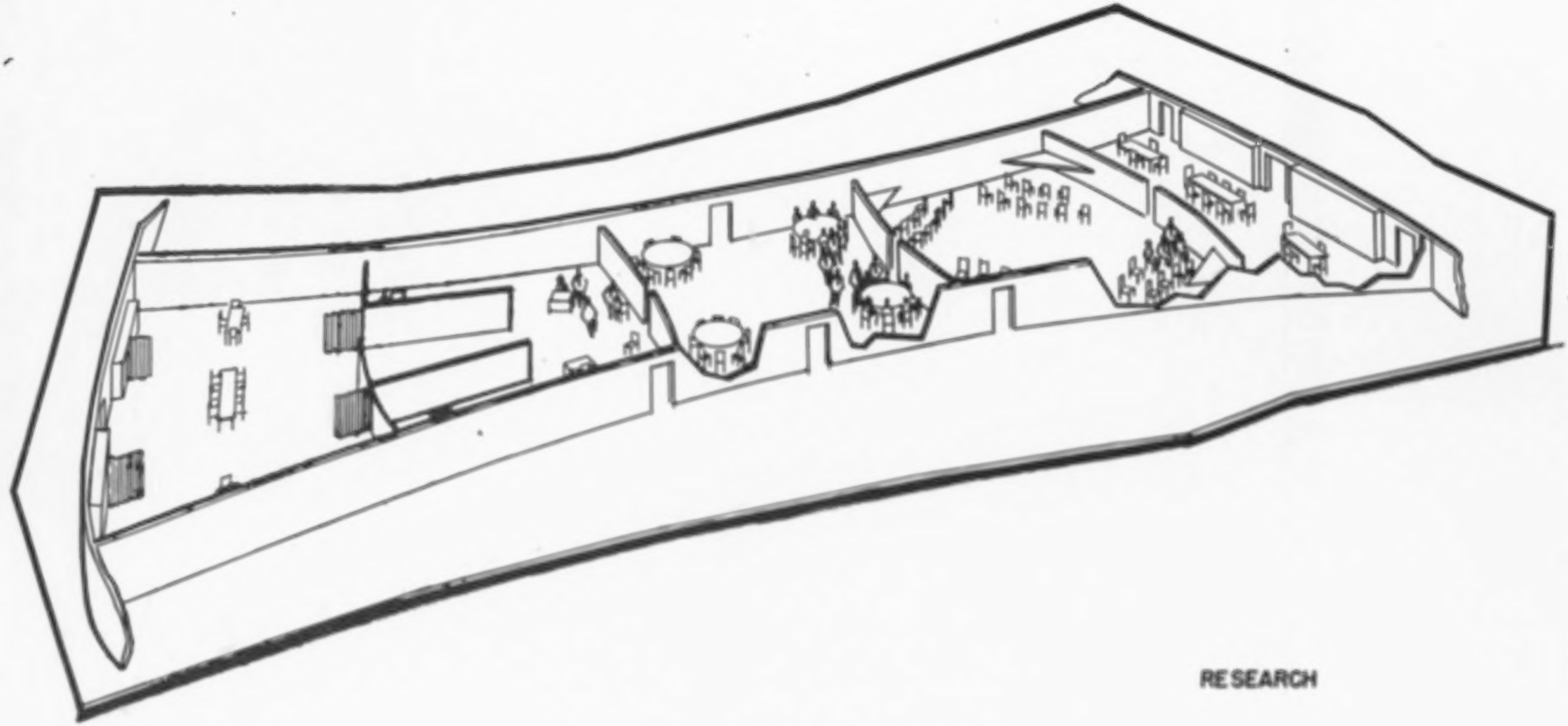
Storage space and usual office furniture.

IV. PERSONNEL REQUIREMENTS

Research Associate
Research Assistant
Clerical and Secretarial (3)
Additional staff as needed, including part-time


CONFERENCE ROOM
OFFICE
RESEARCH
TESTING
CONFERENCE ROOM

RESEARCH DEPARTMENT



RESEARCH

PROFESSIONAL LIBRARY

I. DESCRIPTION OF EDUCATIONAL USAGE

The function of the professional library is to house all professional materials, research, sample texts, periodicals and curriculum guides. This information may be in books, pamphlets, microfilm, audiotape, videotape, or any other "information carrier."

Teachers in the region may use the library facilities for their own work. Individual carrels will be made available for their use and these will be wired in such a way so that any in-service training material that has been produced will be available for individuals to retrieve in this study station.

II. SPACE REQUIREMENTS

A. Library — 12,000 sq. ft.

Houses all materials. Includes information desk, index tables, card catalogs and tables and chairs.

B. Writers' Offices — 600 sq. ft.

Desk space and files for Senior Editor, two writers and two clerks.

C. Technical Services — 4,000 sq. ft.

Ordering, receiving, cataloging, processing and shipping of material.

D. Office — 400 sq. ft.

Head of Library Services and secretary.

E. Book Selection Room — 400 sq. ft.

Tables, chairs and shelves containing new books for librarians to choose for their schools.

F. Machine Room (Air Conditioning) — 500 sq. ft.

Micro readers and printers, XEROX and offset.

G. Audio-Visual Equipment, Film Storage, etc.

To be designed by your audio-visual man.

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

A. Library

	20 Microfilm Cabinets	$ 7,700.
	100 Romeo Lateral File Units (Periodicals)	21,200.
	3 Index Tables	1,500.
	1 Atlas Stand	400.
*	100 3' x 7' Wood Shelving Units	7,000.
	6 Book Trucks	300.
	6 Kick-stools	120.
	1 Information Desk	3,000.
**	1 Card Catalog Cabinet (120 drawers)	1,200.
	5 Typewriters	1,000.
	Total	$43,420.
		Plus Furnishings

B. Writers' Offices

5 Desks and Chairs	$ 1,000.
5 Lateral Files (Romeo)	750.
3 Typewriters	800.
Total	$ 2,550.

C. Technical Services

Book-Jacket Table	$ 150.
12 Book Trucks	600.
28 Steel 3' x 7' Shelving Units	2,800.
Table-top Offset Press	1,700.
Posting Machine	100.
Book Press	30.
9 Typist Desks (Clerks and Catalogers)	1,800.
4 Work Tables 2' x 6' x 33" h.	600.
60 drawer Catalog Cabinet	500.
4 IBM Electric Typewriters (prestige elite)	1,600.
4 High Stools	80.
8 Typist Chairs	400.
3 Office Arm-chairs	270.
1 Visi-record Vertical File Unit	250.
Total	$10,880.

Plus:
2 Fibreboard Book Shipping Cartons per school @ $6. each
Office Shelving

* Add 400 units eventually to be added at the rate of 100 per year which adds $21,000. to the first year's total.

** 4 cabinets eventually adding $3,600. to first year's total.

D. Office

2 Desks and Chairs	$ 600.
1 Typewriter	350.
3 Lateral files (Roneo)	450.
1 Dictating Machine	300.
1 Credenza	200.
1 Bookcase	100.
Total	$ 2,000.

E. Book Selection Room

2 Tables, 8 Chairs	400.
Wall Shelving (20 x 3' sections)	800.
Total	$ 1,200.

F. Machine Room

2 XEROX 914s	15,000.
1 XEROX Microprinter	4,000.
1 Microfilm Reader	700.
3 Tables, 6 Chairs	400.
Total	$20,100.

G. Books, Periodicals, Microfilm

1.	3,000 Periodical Subscriptions	20,000. p.a.
2a.	20,000 Books (100,000 eventual)	80,000. p.a.
2b.	Establishment Grant	20,000.
3a.	1,000 Microfilm (Periodical Titles)	3,000. p.a.
3b.	Establishment Grant	30,000.
	Total 1st year	$153,000.
	Total Annual	$103,000.

IV. PERSONNEL

A. Head, Library Services

To develop and administer a fully integrated information service to member schools in cooperation with other information centers around the world. Requirements: a librarian who is outstanding in ideas and accomplishment with proven administrative effectiveness.

B. Senior Reference, Catalog, Audio-Visual Librarians
Senior Editor

Four section heads with at least two successful years of administrative experience in their field. Senior editor to have writing and editoral ability in addition to library training and experience. (Emphasis on subject background in education and not on public relations).

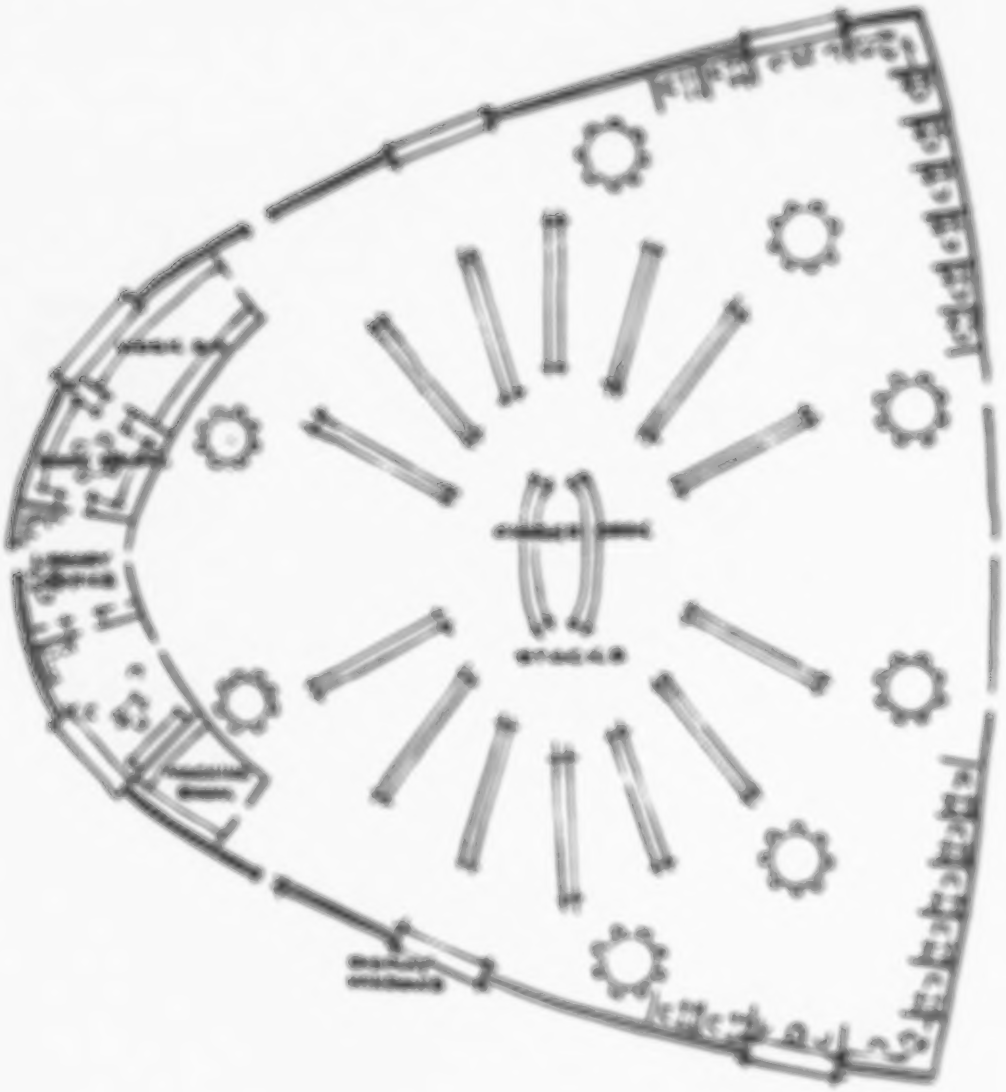
C. Reference (5), Catalog (2), Audio-Visual (2) Librarians
Writers (2)

Qualifications similar to the section heads with more emphasis on successful experience (2-3 years minimum) in their special field rather than on administration.

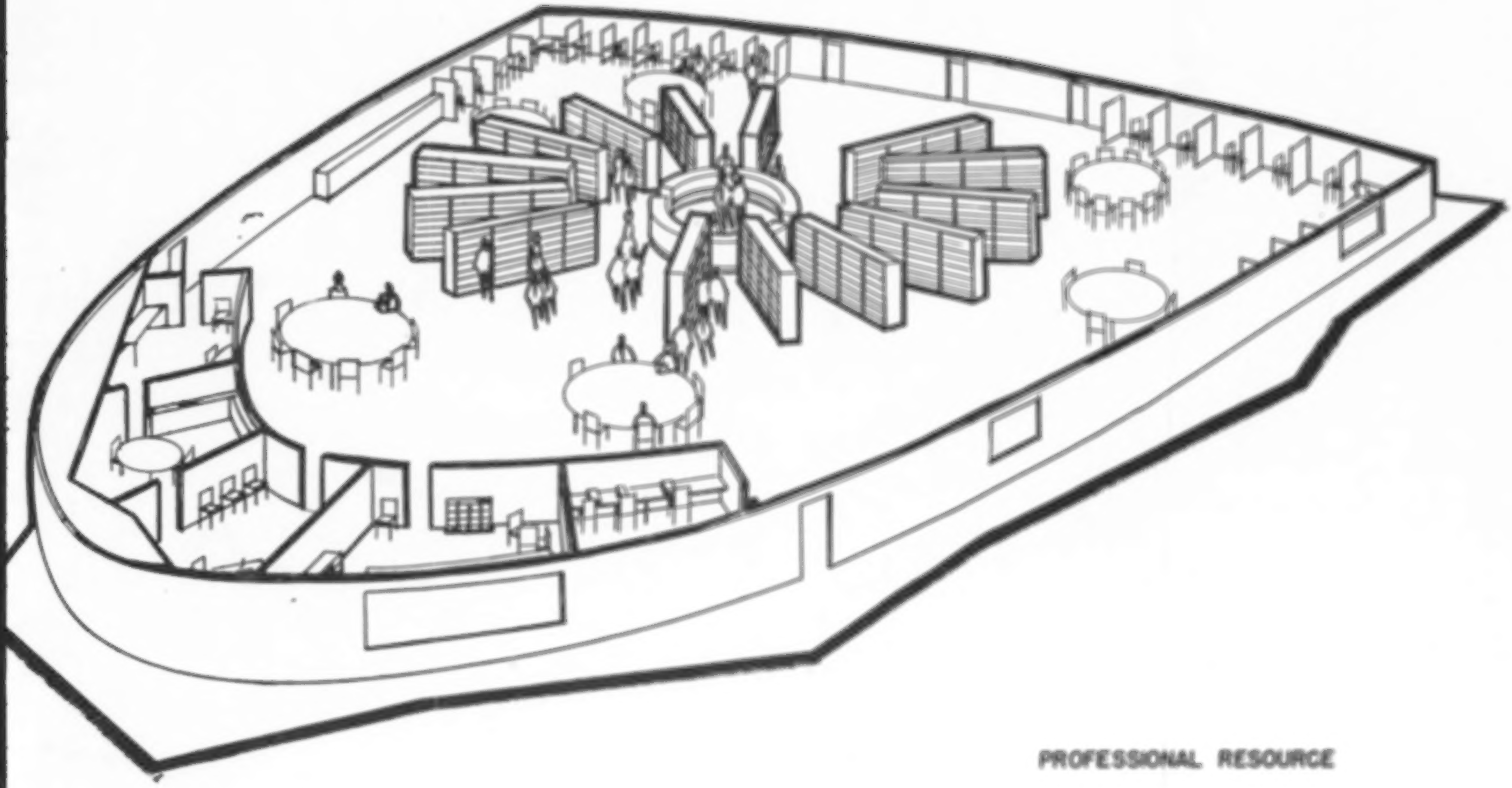
D. Secretary (for Head, Library Services)

E. Clerks (20)

PROFESSIONAL RESOURCE
DEPARTMENT



PROFESSIONAL RESOURCE DEPARTMENT



PROFESSIONAL RESOURCE

PSYCHOLOGICAL AND GUIDANCE

I. DESCRIPTION OF EDUCATIONAL USAGE

The purpose of this department is to foster healthy mental, emotional and social development of all the pupils of the region. Psychiatrists, psychologists and social workers make up the staff of this department.

A regional center can provide general services of:

A. Mass communication of psychological principles, as in parent education and teacher training in child development, psychodynamics and learning theory.

B. Research and data processing specific to psycho-educational problems (as opposed to regular curriculum study).

C. Specialists (resource personnel) for less than usual problems, testing of handicapped, deaf and blind children, etc.

II. SPACE REQUIREMENTS

Director of Pupil Personnel (15' x 15')	225 sq. ft.
General Office Areas -- 2-30' x 35' each	3,100 " "
Waiting Rooms -- 2-12' x 20' each	480 " "
Regional Psychologists' offices -- 3 rooms with operable walls-10'x24'	720 " "
Group Therapy Office (10' x 24')	240 " "
Playrooms -- 2-12' x 18' each	432 " "
Observation room between playrooms with two-way mirrors (9' x 18')	162 " "
Offices -- 18-for testing, guidance, reading, etc. (12' x 14' each)	3,024 " "
Workroom (14' x 22')	308 " "
Reading Consultant's Office (11' x 12')	132 " "
Attendance Officer's Office (11' x 12')	132 " "
Secretaries' Offices -- 2-10' x 18' each	360 " "
Stock Rooms -- 2-9' x 10' each	180 " "

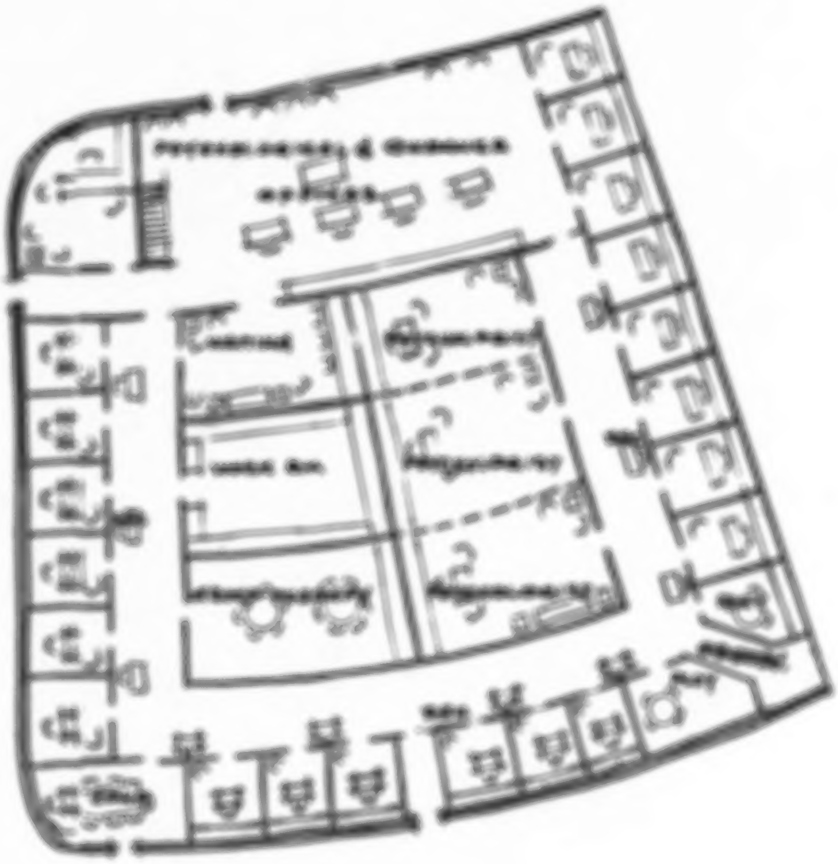
III. EQUIPMENT REQUIREMENTS

All offices should be sound-proofed. The playrooms should be equipped as miniature classrooms with kindergarten materials and furniture. The observation room should have two-way mirrors on both sides.

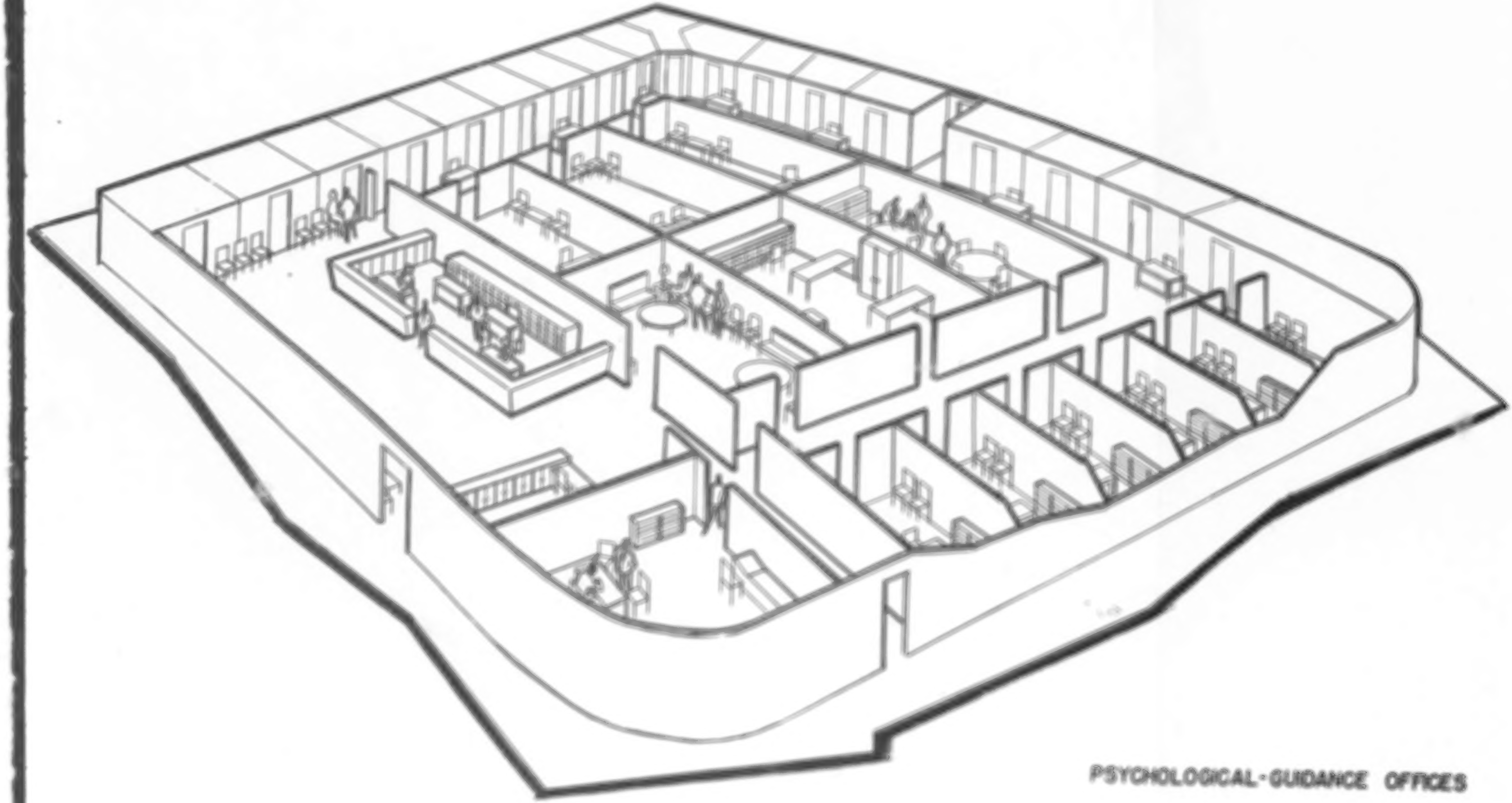
IV. PERSONNEL REQUIREMENTS

The personnel will consist of consultants and specialists to serve the region for special problems and case loads that are not served by the local districts or are of a special nature such as court cases, drop-outs and severe emotional problems.

Staff:
- Director of Pupil Personnel
- Psychologists
- Psychiatrists
- Reading Consultant
- Speech Therapist
- Guidance Counselors
- Attendance Officer
- Social Workers
- Secretarial and Clerical Staff



PSYCHOLOGICAL AND GUIDANCE DEPARTMENT



PSYCHOLOGICAL-GUIDANCE OFFICES

DEMONSTRATION CENTER

I. DESCRIPTION OF EDUCATIONAL USAGE

The Demonstration Center area will serve the school systems participating in the Regional Educational Communications Center Project in a number of different ways.

A. The latest audio-visual equipment will be on display for teachers, administrators and board of education members to examine and evaluate.

B. It will be the one place where those responsible for selecting audio-visual equipment for local school systems will be able to make their own comparisons of all leading makes of equipment.

C. It will be the area in the Communications Center where school administrators may come to learn about the educational uses of the various pieces of equipment.

D. It will be the area where small group workshops will be conducted to improve utilization practices and where teachers will learn new techniques.

E. If courses for college credit are to be offered at the Communications Center, the Demonstration Center will serve as the equipment pool for the instruction of these courses.

F. The Demonstration Center will serve as the testing area for new pieces of equipment as they come on the market.

II. PHYSICAL REQUIREMENTS

A. Space

The Demonstration Center area should be a large room at least 20' x 40'. Adjoining one 40' side of this room should be the director's office (12' x 18'), the secretary's office (10' x 12'), and a workroom and office for the technical assistant (12' x 12'). The height of the ceiling should be 15'.

B. Light-Control

It must be possible to use audio-visual equipment under ideal classroom conditions. Light-control facilities will be needed or the area could be an inside area with no windows.

C. Ventilation

The facilities of the Demonstration Center are designed to serve up to 25 people at one time. This is a "relaxed area" where people will be working together for long periods.

D. Electrical Equipment

An adequate source of electricity will be a necessity for this area. A strip of plug mold should run the full length of each of the four walls of the large area. Each of these strips should be on a separate 30 amp circuit. The use of plug mold will permit individual outlets to be moved the length of the strip as needed. A 3-wire system should be used throughout this room.

Eight (8) flush-mounted double outlets should be mounted to the floor of the Demonstration Center (see sketch). These outlets should be covered to protect them when the floor is being washed or polished.

The switchbox to control this room should be mounted within the Center. Circuit breakers should be used rather than fuses (see sketch). Ceiling lights should provide adequate, even, illumination throughout the area. Lights within the 20' x 40' area should be controlled by two (2) sets of switches located by the main entrance and one set by the emergency exit door. A dimmer control should be located along a part of the light switches. These dimmer controls should be variable controls permitting any desired degree of light from total darkness to maximum brilliance.

The director's office, the secretary's office, and the workroom for the technical assistant should have ceiling lights which operate independently from the lights in the larger area. Each of these areas should have a double electrical outlet on each of the four walls with a strip of plug mold along the workbench wall in the room of the technical assistant.

E. Acoustical Treatment

Proper acoustics within the 20' x 40' area is a definite requirement. At the same time, this will be a "noisy area". Sounds from this area should not be permitted to disturb others working throughout the Center. Special acoustical treatment needs to be given to the 40' wall adjoining the office space for the director, his secretary, and the technical assistant. These people should also be able to work in their offices without being disturbed by the activities from the larger area.

F. TV and FM Antennas

It will be necessary to have an outlet in the Demonstration Area so that a television set and an FM radio or tuner may be used.

3

III. PHYSICAL EQUIPMENT REQUIREMENTS

On the North wall, mounted as close to the ceiling as possible, should be a 70" x 70" matte screen properly mounted to eliminate "keystoning" when transparencies are being projected.

Mounted on the same wall two feet to the left and two feet to the right of the screen, should be high-quality speakers. These will be used to demonstrate stereo sounds when used with tape recorders, record players, or tuners.

Beginning on the North wall and running completely around the room should be 98 feet of drawer and cabinet space. (METALAB EQUIPMENT CO. of Hicksville, Long Island, New York, provides space cabinets with any desired combinations of drawer or storage space.) The base cabinets are 30" high and 30" deep and are to be topped by a 1-1/4" thick laminated plastic counter top and curb, each with a stainless steel edge banding. Locks should be provided on at least half of these base cabinets. Wall cabinets are to be provided above all base cabinets except those on the North wall. The bottom of these cabinets is to be 18" above the curbing of the counter tops. The cabinets are to be 30" high and will vary in length and type as desired. All wall cabinets will be 24" deep and should have adjustable shelves. Approximately half of these cabinets should have sliding glass doors. These cabinets will be used to display 35mm cameras, 8mm cameras, filmstrip and slide viewers, etc.

The remaining wall cabinets should have solid metal sliding doors. These cabinets will be used for general storage.

Four (4) sturdy folding tables, each 8' x 30" will be needed. These will be set up in the center of the floor area. Normally, all equipment will be displayed on counters. When it is to be demonstrated, equipment will be removed from the counter to one of the folding tables. These may be moved into different patterns as desired.

Twenty-five (25) chairs will be required. These will be set up around the folding tables.

Estimated Costs:

Metalab counters and cabinets (installed)	$6,500.
Four formica-topped 8' x 30" x 30" folding tables and 25 comfortable folding chairs	450.
Equipment for Technical Assistant's Office-Workroom, including desk, chair, workbench and necessary tools, wire, connectors, etc.	600.
One 70" x 70" wall mounted matte screen (electrically operated)	200.
Two high-fidelity speakers and cabinets	350.

IV. MINIMUM EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

Five different makes of 16mm sound projectors @ $500.	**$2,500.**
One rear-screen repetitive 16mm sound projector	**1,000.**
One 8mm magnetic sound projector	**300.**
Three 8mm silent projectors @ $200.	**600.**
Ten filmstrip/slide projectors @ $100.	**1,000.**
Three filmstrip previewers @ $15.	**45.**
Four 2x2 automatic slide projectors @ $125.	**500.**
Two 3-1/4 x 4 slide projectors @ $200.	**400.**
Three opaque projectors $300.	**900.**
Six overhead projectors @ $250.	**1,500.**
Two 8mm cartridge projectors (silent) @ $100.	**200.**
Four micro-projectors @ $150.	**600.**
Three sound filmstrip projectors @ $300.	**900.**
Ten record players @ $75.	**750.**
Fifteen tape recorders @ $200.	**3,000.**
Ten projection screens (assorted sizes and fabrics @ $50.)	**500.**
Five projection tables @ $35.	**175.**
Three educational TV receivers @ $250.	**750.**
Six classroom radio receivers @ $100.	**600.**
Six 35mm cameras @ $200.	**1,200.**
Teaching machines and learning programs	**5,000.**
Miscellaneous materials, feltboards, burrboards, easels, demonstration records, etc.	**2,500.**

VI. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

The Demonstration Center will be in charge of a Director. He will be assisted by a secretary and a technical assistant.

A. Director of the Demonstration Center

Qualifications: He, or she, should have a number of years of successful teaching experience. If possible, this experience should include both elementary and secondary school teaching. This person should have taken work in curriculum, administration and supervision, as well as a number of audio visual courses. He should be a former Audio Visual Director from a school system where emphasis was placed on the effective utilization of AV equipment. He must have proven leadership ability in order to work successfully with school administrators and teachers from the districts participating in the Regional Educational Communication Center.

Responsibilities: He must be familiar with every piece of equipment in the Demonstration Center. He will be able to operate each item, explain the strengths and weaknesses of each, and be able to demonstrate ways of using this equipment to help the teacher use it more effectively.

He must be able to work with groups of administrators or teachers to point out new or improved techniques for using specific equipment.

He should have a good working relationship with salesmen and manufacturers. He will have to be up-to-the-minute not only on available equipment but on proposed products as well.

B. Secretary to the Director

Qualifications: In addition to the competencies expected of a good secretary, this person should be attractive, poised, well-spoken and have the ability to meet and talk with people. She will need skills in record keeping.

Responsibilities:

Keeping an accurate inventory of equipment owned by the Center and loaned to the Center by salesmen will be a major part of her duties. These records will be vital for insurance purposes.

She will serve as hostess for the Demonstration Center.

In the absence of the Director, she will be called upon to show visitors around the Center and to answer their questions, or some of them, about equipment on hand.

C. Technical Assistant

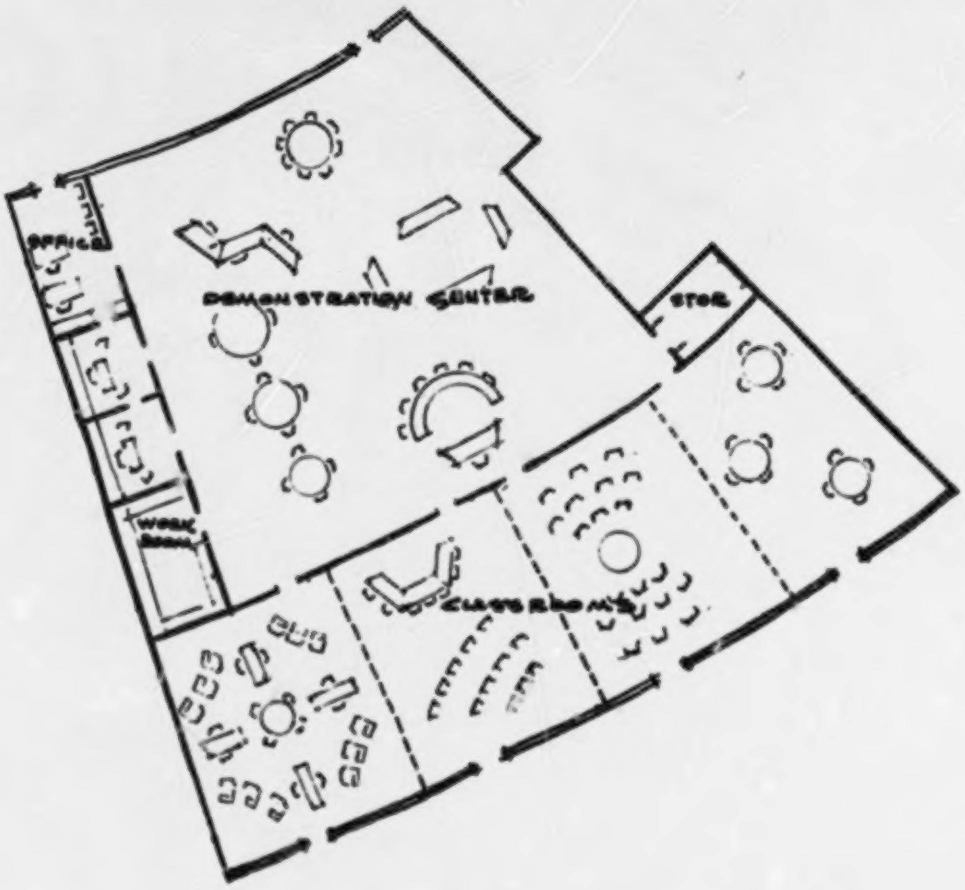
Qualifications: Technical "know-how" in the fields of electronics and photography are requirements for this position.

This person must also be physically able to move AV equipment from place to place.

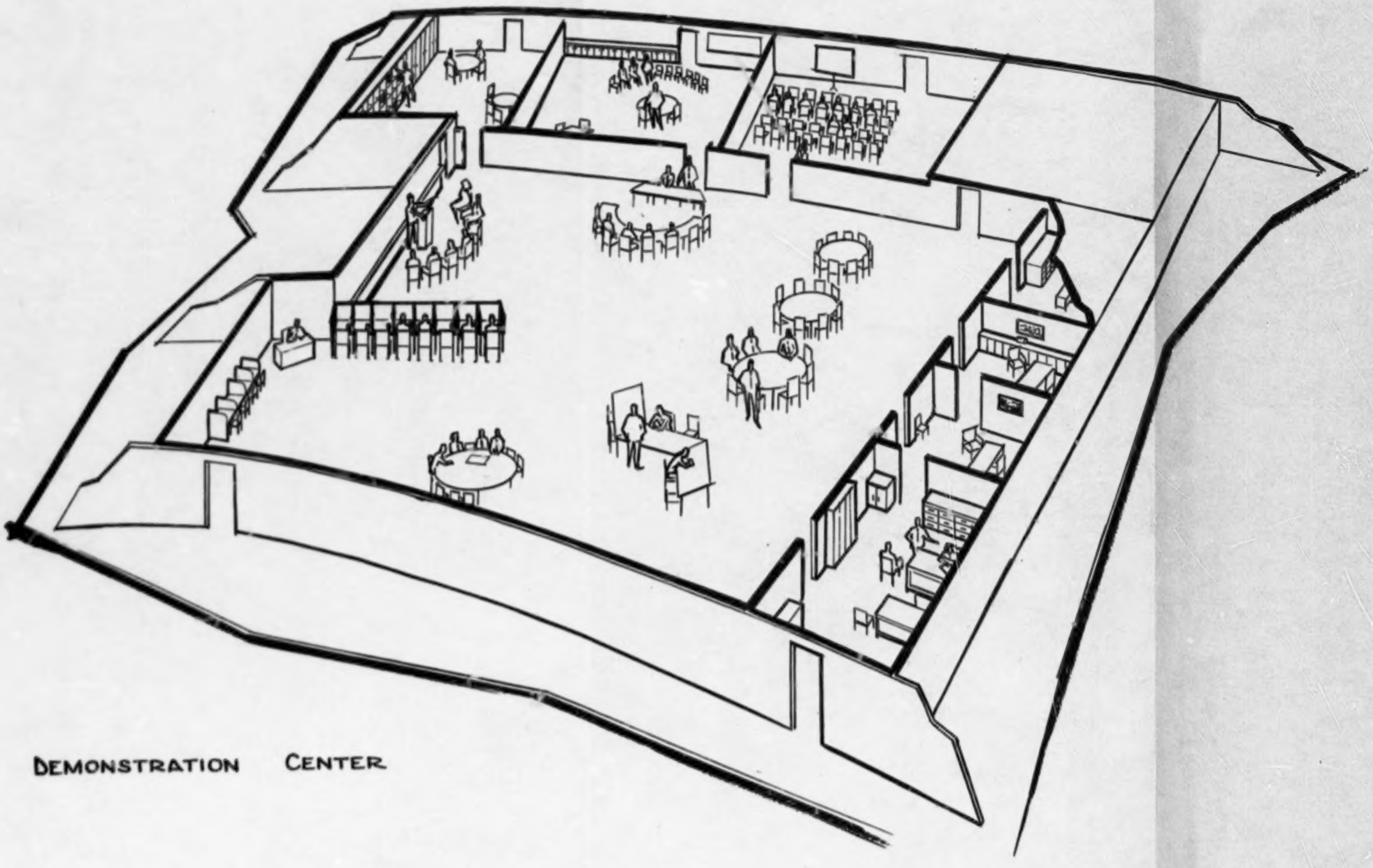
Responsibilities: The technical assistant will serve in a capacity similar to a laboratory assistant. He will be expected to be on hand when visitors are present at the Demonstration Center. If, for example, they are interested in comparing five different 16mm sound projectors, he will take the projectors from the counter and set them up on one of the folding tables. He will see that they are functioning properly. If the visitors request assistance in threading, etc., he will be on hand to help. When the Director is conducting workshops, the assistant will set up and later put back equipment that is used.

The technical assistant will be responsible for making up patch cords, making minor repairs to equipment, keeping the heads on the tape recorders clean, and doing general minor maintenance to equipment which is a part of the Center.

DEMONSTRATION DEPARTMENT


OFFICE
DEMONSTRATION CENTER
STOR
WORK ROOM
CLASSROOMS

DEMONSTRATION DEPARTMENT



DEMONSTRATION CENTER

EDUCATIONAL RADIO STATION FACILITIES

I. DESCRIPTION OF EDUCATIONAL USAGE

Radio offers a relatively inexpensive, yet very potent and flexible, means of transmitting to classrooms and homes simultaneously. It can bring a wide variety of materials, personnel and community resources to large numbers of pupils and adults.

Through radio, for example, national and world figures in the arts, sciences and social sciences can come into the classroom and home to share the wealth of their experiences and to contribute their special knowledge.

The radio station can design and create programs to fit local area needs that cannot be met as effectively or as economically by other media. For example, a vocationally oriented radio series based on local industries and their needs can be extremely effective, yet far less expensive than if presented by television.

With control of a radio broadcasting outlet, scheduling is flexible enough to permit repeat broadcasting by tape recordings of programs designed for use in the secondary schools at many different times to allow for wider utilization. Thus, over the period of a week, an 11th year science program could be repeated enough times at different times of the day to give the maximum possibility of use in various schools.

II. SPACE REQUIREMENTS

The over-all space requirements of a radio station facility would be roughly 5,800 square feet and should be air conditioned and acoustically treated throughout. Rubber or cork tile flooring is recommended. This total space requirement does not include provision for the broadcast of large group musical or other performance and is predicated on the availability of the communication center auditorium for such purposes. The auditorium should be wired accordingly with this use in mind. Likewise, no provisions have been included for extensive tape editing or dubbing facilities, as these it is understood will be available elsewhere in the complex, as will be extensive storage and file space for disc and tape recordings.

A. Administrative and Program Office area:

Office space approximately 20' x 25' for administrative head, staff producer-directors, secretary and typist.

B. **Planning-Conference-Rehearsal area:**

Two conference rooms (approx. 20' x 15' and 18' x 12') with double glass partitions into adjoining studio, S-1, conference tables and chairs, and four microphone inputs in each room for use as auxiliary studios.

C. **Studio Area:**

Two studios, S-1 and S-2 (approx. 25' x 25' and 20' x 25') acoustically treated with double glass partition into control room area, six microphone inputs each with sound-lock entrances.

D. **Engineering and Technical Operations Office area:**

Office space approx. 20' x 25' for chief engineer, technical staff, and secretary, with following connected shop area.

E. **Shop Area:**

Approx. 15' x 20' adjoining control room area.

F. **Control Room Area:**

Two connected areas, C-1 and C-2 (approx. 15' x 18' each), adjoining and looking into studio areas S-1 and S-2 respectively through double glass partition.

G. **Announce Booth Area:**

Approx. 6' x 8' looking into studio areas and control room areas through double glass partitions.

H. **Master Control and Transmitter Room Area:**

Approx. 20' x 15' adjoining control room areas and looking into them through double glass partition.

I. **Combination Waiting Room and Lounge:**

Approx. 20' x 23' with connecting men's room and ladies' room.

J. **Lavatories (3):**

Two approx. 12' x 12' adjoining and connecting with waiting room-lounge, and one approx. 10' x 12' adjoining shop-technical operations office.

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

A. Studio Areas:

12 folding metal chairs	$ 90.
4 trapezoidal tables	120.
4 hydraulic microphone floor stands	120.
2 boom microphone stands	70.
8 table microphone stands	60.
12 music stands	60.
6 microphones	750.
4 rehearsal-on the air signs	100.
Wiring, speakers, microphone inputs, etc.	200.
Total	$1,570.

B. Engineering and Technical Operations Office:

6 desks and chairs	600.
2 typewriters	300.
1 four drawer metal file cabinet	75.
Supplemental office furniture--chairs, work table, etc.	200.
Total	$1,175.

C. Shop Area:

Built-in work bench, stools	50.
Small tools, wrenches, solder guns, etc.	75.
Test equipment-oscilloscope, tube tester	500.
Total	$ 625.

D. Control Room Areas:

2 audio consoles	$2,000.
4 three-speed turntables with supplementary amplifiers, pre-amps, etc.	1,000.
1 sound truck with three variable speed tables, supplementary amplifiers, self-contained speakers and mixers	500.
2 microphones	250.
Total	$3,750.

E. Announce Booth:

1 Built-in broadcast and news desk	100.
1 microphone	100.
Total	$ 200.

F. Master Control-Transmitter Room:

1 audio master control console	750.
4 high-fidelity tape recorders, rack mounted, remote controlled, one designed for tape editing	3,600.
1 storage-file cabinet - records	75.
1 storage-file cabinet - tapes	75.
1 complete set spare tubes	1,000.
1 FM broadcast transmitter with supplementary frequency and modulation monitor	10,000.*
Total	$15,500.

* Prices will vary depending on power output desired. Price indicated average for 10kw transmitter.

No figures have been included for either antenna or antenna supporting structure. These will depend on make of transmitter purchased, location of building and its height above surrounding terrain, and the topography of the surrounding terrain itself. Desired range of station and the radius of desired primary signal area will also enter into these decisions.

G. Combination Waiting Room-Lounge:

Furniture and accessories	$1,000

H. Miscellaneous Items:

Internal wiring for inter-com, talk-back system, room speakers, cue speakers, electric clocks, incidental furnishings, etc.	$2,500

IV. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

Number of hours of daily operation and percentage of live programming will determine size and composition of staff. The following staff represents those needed to operate 12-15 hours daily with a substantial amount of local-live and live remote programming.

A. Administrative Head -- Station Manager and Program Director (1)

Teaching experience and broad educational background. Previous experience in educational broadcasting management, program design and development, production. Knowledge of curriculum and ability to work with educators and community groups necessary. Must have administrative ability and a good approach to personnel and public relations.

B. Chief Engineer and Supervisor of Technical Operations (1)

Must possess 1st Class Radio License and experience in broadcast station engineering. Background in teaching or educational broadcasting would be helpful. Must know practical operations as well as electronics theory.

C. Producer-Directors (6) (Will also handle some staff announcing)

Experience in radio production and directing, with some teaching or educational broadcasting background desirable. Knowing the objectives and the educational (curriculum) content, must be able to help educators in program design and development.

D. Continuity-Script Writers (2)

Experience and/or training in writing for radio. Background in education helpful.

E. Engineer-Technicans (5)

Two must have 1st Class Radio-phone License. Thorough knowledge of audio and broadcast equipment necessary. Some educational or commercial experience helpful.

F. Secretary to Administrator and Office Manager (1)

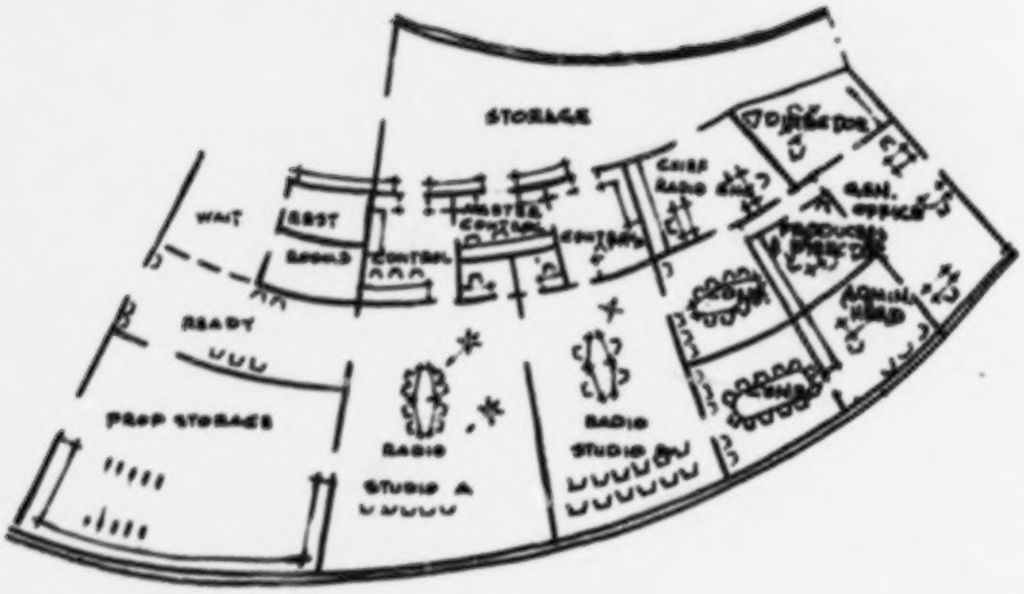
Experienced in secretarial duties, fast and accurate shorthand and typing. Familiarity with broadcasting station routines valuable.

G. Stenographer-Typists (2)

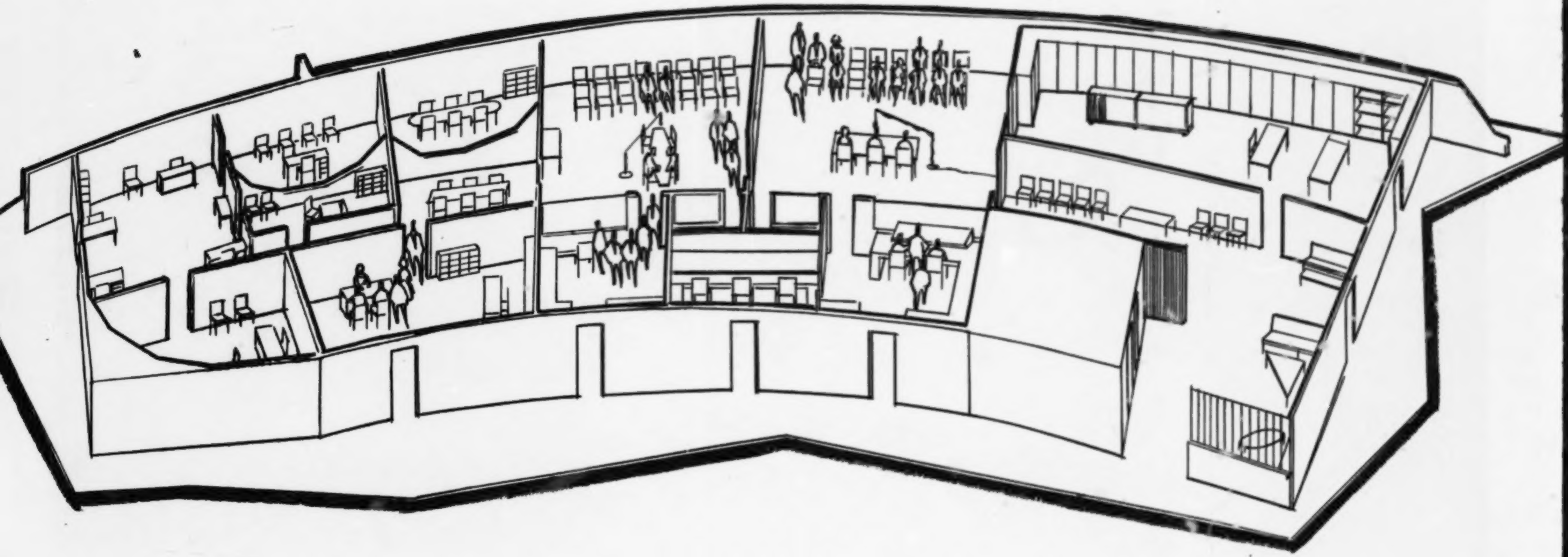
One for administrative - program office, one for engineering-technical operations office. Fast and accurate shorthand and typing valuable, but must be fast and accurate typists.

It is entirely feasible for some of the staff positions to be filled by qualified college, or even high school, students. This would provide opportunity for on-the-job experience for qualified students.

RADIO DEPARTMENT


STORAGE
DIRECTOR
CHIEF RADIO ENG.
GEN. OFFICE
PRODUCER DIRECTOR
WAIT
REST
SOUND
CONTROL
MASTER CONTROL
CONTROL
READY
ADMIN. HEAD
PROP STORAGE
RADIO
STUDIO A
RADIO
STUDIO B

RADIO DEPARTMENT



RADIO LABORATORY

TELEVISION PRODUCTION CENTER

I. DESCRIPTION OF EDUCATIONAL USAGE

To be economically and educationally feasible, the facilities, staff and space of this center must produce a high quantity of material, the quality and variety of which is far in excess of that which might be obtained from any other source such as local, closed-circuit systems.

II. SPACE REQUIREMENTS

If productions for educational purposes are to be successful, they must bring to the viewer something which he could not readily find in any other way. In addition to resource people these special experiences should consist of objects, machinery, inventions and demonstrations of all sizes and complexities from an amoeba to an atomic reactor or a circus ring if it meets the educational need. The production center complex represented in the accompanying drawings should provide space and access for a tremendous variety of these.

The design of space provides for the utmost in controlled traffic flow and a minimum of unwanted intermix of Visitors, Administrative Personnel, Production Personnel, and Talent.

A. Studios:

1. Two 40' x 50' studios with separate and easy access for set and prop movement, production personnel, engineering personnel and cameras.

2. Outside access for movement of automotively transported equipment and effects into either studio. Automobiles themselves may be driven up the ramp and through the door in Studio B for such as an auto-mechanics production.

3. Double, sound lock, dividing doors between studios can be partially or fully retracted, mechanically into storage area to provide 40' x 100' studio for productions requiring major space.

4. 20' x 30' finished concrete slab adjacent to Studio B covered with translucent plastic material will provide base of operations for "out-of doors" programming which will include those objects and demonstrations not suitable for interior production, i.e., chemical fire fighting--weather balloon launching and tracking, etc. The plastic cover will serve as weather shield for cameras and talent and will allow natural diffused lighting of talent and set in a production shot partially on slab and partially on ground level.

B. Studio and Prop Storage

Special attention is given to the place where sets, flats, and props are stored before and after use. It has been designed to be: large enough to hold a complete variety of background and set implements, such as properties, science tables, flats, chairs, panel tables, desks; and close enough to provide quick and easy access to and from studios and shop. It should promote the uncluttered, easy-to-work-in studio.

C. Closed-Circuit Lab and Preview Room

This room will provide one closed circuit camera with appropriate monitors and lighting and is designed to facilitate experimentation and examination of proposed on-camera materials by the talent and the production staff. It is an easy and efficient way of answering the ever-present question: "How will this 'take' on camera in terms of grey-scale, aspect and size?" Graphics, models and even clothing can be pretested without involving major production area or engineering personnel.

When not in use as a lab, this room may double as preview room for tapes and kinescopes emanating from tape-film studios.

D. Viewing Rooms

These are designed to fill the desire of those inevitable visitors who must see what is going on in the studio directly. Theater seats, a 10' double glass window into the studio, a full set of camera monitors and line monitors with program audio will satisfy curiousity and prevent visiting observers from interfering with work-traffic flow while attempting to view program productions.

E. Professional Work Offices

No attempt has been made to provide all potential talent with individual office space. Each area is large enough to accommodate five professionals during planning and development of program material assujing that all will not be working at the same time. Continuous wall counter-top and drawer and shelf space above and below will provide better than adequate facilities for research, writing and storage.

F. Reference Center

This area provides professionals with easy access to major reference materials.

G. Talent Ready Rooms

This space is provided to prepare talent immediately before performance both emotionally and physically. Lavatory and make-up facilities are provided as well as several easy chairs and tasteful and pleasant decor. This is the place where talent and director or members of a talent team can talk things over, quietly and comfortably, before performance and generally acquire proper frame of mind while last minute arrangements are made in the studio.

Easy and quick access to the studio is provided so that director may count on talent for quick call. Control room to ready room intercom will provide cueing system.

H. Visual Ready Rooms

These areas answer the problem of loss or misplacement of materials prior to program time which often causes production embarrassment or increased cost of productions due to time loss. Operationally, all hand carriable materials to be used in production such as graphics, models, pointers, chalk, books, scripts, etc. would be stored in appropriately designed and labeled shelf space, prior to studio set-up time. The production assistant and the talent may check out all materials before they are placed in the set. Materials and space are also provided for last minute touch-up.

I. All other areas and their personnel juxtaposition are standard and self explanatory administrative organizations.

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

A. Electronic and Studio Equipment

5-	4-1/2" image orthicon camera chains including image orthicon camera with 8" viewfinder, camera control processing amplifier, remote control unit, solid state power supply, image orthicon orbiter unit, camera cable with connectors @ $25,000.	$125,000.
2-	Vertical interval switchers including power supply and 12 video inputs @ $8,500.	17,000.
2-	Special effects generators @ $5,400.	10,900.
4-	Transistorized sync generators @ $3,500.	14,000.

A. (cont'd.)

2-	Automatic sync generator changeovers @ $500.	$ 1,000.
2-	Control room monitoring facilities including video monitors, preview and program switching, audio switching, audio monitors, viewing room monitors and building intercom @ $10,000.	20,000.
2-	Audio console equipment including 10 channel input and power supply @ $2,000.	4,000.
2-	Turntables @ $520.	1,040.
2-	Audio Tape Recorders @ $800.	1,600.
3-	Program film chains including vidicon cameras and lenses and power supply @ $4,000.	12,000.
3-	8" monitors @ $200.	600.
3-	150 random selection slide projectors capacity 100 slides @ $2,500.	7,500.
6-	16mm motion picture projectors @ $7,000.	42,000.
3-	Multiplexers @ $2,000.	6,000.
1-	All-facility quadriture video tape recorder @ $60,000.	60,000.
2-	Quadriture record play-back video tape recorders @ $39,000.	78,000.
4-	Slant track video tape recorders @ $15,000.	60,000.
2-	Video tape splicing units (one 7-1/2 IPS and one 15 IPS) @ $1,300.	2,600.
1-	Hot processing kinescope recorder 16mm	65,000.
1-	Master control equipment including video monitors, audio monitors and master switching equipment	15,000.

B. Terminal Control Equipment

2-	Video stabilizing amplifiers with power supplies @ $1,800.	$ 3,600.
5-	Video automatic gain controls @ $700.	3,500.
2-	Audio stabilizers and peak limiters @ $1,500.	3,000.
1-	Voltage stabilizing system	10,000.

C. Test Equipment

2-	Dual trace oscilloscope, with special plug-in preamp @ $2,500.	5,000.
1-	Multi-burst generator	4,800.
1-	Stair-step generator	1,800.
1-	Window generator	1,800.
	Miscellaneous test equipment and tools including vacuum tube volt meter, tube checker, etc.	1,500.

D. Studio Accessory Equipment

5-	Counter-balance camera pedestals @ $2,200.	11,000.
5-	Friction heads @ $500.	2,500.
1-	Two-man camera crane	7,500.

E. Camera Lenses

1-	Zoom lens 35mm--350mm	8,500.
1-	Zoom lens 60mm--240mm	2,990.
5-	35mm @ $280.	1,400.
5-	50mm @ $200.	1,000.
5-	90mm @ $190.	950.

E. (cont'd.)

5-	135mm @ $240.	1,200.
2-	Three-wall cycloramas @ $4,000	8,000.
2-	Studio lighting and fading systems including adjustable batten system @ $15,000.	30,000.
1-	Closed circuit video lab system including vidicon camera equipment lighting and monitors	6,000.

IV. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

The permanent staff and their functions based on a 7-1/2 hour production day are as follows:

A. Executive Production Director

Administrative head of staff who would direct total operation of facility and staff. He should have major responsibility for final decisions on program acceptability, content and talent selections. Other responsibilities include studio and production scheduling, production team assignments and public relations.

Desirable Background and Experience:

The fundamental professional orientations of candidates for this position should be education. Secondary competence and experience in the management and operation of an educational television production center must also be a prerequisite.

B. Producer-Directors (3)

These persons should have total responsibility for translating educational ideas developed cooperatively with talent into televisable, interesting production. They have responsibility for being knowledgeable and capable of exploiting community as well as commercial resources for the broadenment of the production. The design concepts of each program set and the decision as to what properties, equipment and materials are to be used in the production should rest with the producer-director.

B. (cont'd.)

It should be the responsibility of each producer-director to lead one production team and to provide direct supervision for production assistants. Responsibility for program direction is the ultimate responsibility of these persons.

Desirable Background and Experience:

Education generally and teaching experience specifically should be half of the requirements for the position of producer-director. The other half should, of course, be formal-training and/or experience in television staging, production and direction.

C. Production Assistants (3)

The chief role of the production assistant is to materially implement the production design and schedule finally arrived at by the combined effort of the producer-director and the talent. A listing of production responsibilities are as follows:

1. Acts as liaison between producer-director and talent, team and graphics, designer, television engineer, film-tape team, stage craft engineer and outside resource people and materials.

2. Responsible for seeing to it that all graphics, sets and properties are satisfactorily completed and in place for rehearsal and production.

3. Selects, orients and schedules student cameramen, floormen, technical directors, audiomen, program engineers, and stage hands for each production.

4. Supervises student assistants.

5. Directs studio set-up according to plan.

6. Directs studio lighting.

7. A prime function of this person would be to assume any position on the studio production team in an emergency or at a time when a student assistant might be inadequate because of a particularly complex operation in the production.

Desirable Background and Training:

Formal college training in television production and/or considerable production experience in educational or commercial stations. He should have training and experience in control console operation, electronic shading, video switching and audio control and switching. Must also be trained in studio lighting.

D. Television Stagecraft Engineer

The duties and responsibilities of this person would fall mainly in the area of set designer and supervisor of construction and finishing. Working from the set requirements and ideas of the producer-director the stagecraft engineer would sketch a drawing of an appropriate set for each production for the approval of the producer-director. Upon approval he might then choose to implement this drawing through a combination of existing materials and materials which he would fabricate in the shops.

The stagecraft engineer should have the assistance of high caliber high school and/or college students who have chosen the allied industrial art fields as a career study course. He responsibility would, of course, include the work supervision of these students.

Desirable Training and Background:

Formal training in theatrical set design in addition to experience in either stage or television set construction is a prime requisite for this position. It would be desirable for candidates for this position to have teaching experience in the industrial arts field since a large portion of the work relates to the supervision of student aides.

E. Engineering Staff

1. Chief Studio Engineer

One of the truly key positions in the television production center is that of the chief studio engineer. The sole responsibility of the position is the operation and maintenance of everything electronic in the studio: cameras, camera controls, video tape recorders, etc. All use of studio equipment must be channeled through his office and he or his assistant should be in attendance in the Master Control Room at all times during the production.

Desired Training and Experience:

Any candidate for this position must have at least two years of college level training in electronics and by necessity must have an active first class radio-telephone license. Atleast five years of television engineering experience should be required.

2. Assistant Engineer

This position is, of course, related to and under the supervision of the chief engineer. Candidate for this position should have the training and ability to spell as well as assist the chief engineer at any engineering function.

Desired Training and Experience

Two years of college level electronics training; first class radio-telephone license; two years of television studio-engineering experience.

F. Film

1. Tape Film Engineer

The chief functions of this position are: The operation and adjustment of video tape recorders (quadriture and slant track), before and during performance; electronic editing of video tape; operation and adjustment of kinescope recorder. Supervision of the assistant tape-film engineer completes the responsibilities for this position.

Desired Training and Experience:

Candidates for this position must have two years of formal electronics training. Certification of successful completion of a manufacturer's video tape recorder training course should also be required. At least three years of experience in video tape recorder and kinescope recorder operation, including video tape editing, is a desirable background.

2. Assistant Tape Film Engineer

The candidate should, of course, work under the direction of the tape-film engineer and should be expected to operate all recording equipment under supervision. His chief responsibility should be the program film chains from which appropriate film material is integrated into the production. In addition studio rear-projection equipment should be the responsibility of this position.

Finally, supervision of student tape-film assistants needed to fill out the tape-film staff would fall into the list of responsibilities for this person.

Desired Training and Background

Candidates for this position should have at least two years of experience in the operation of video tape recorder and film chains in commerical and/or educational studios.

G. Non-Production Staff

1. Educational Television Research Specialist

The purpose and function of this position is two-fold. First, the encumbent in this position should be equipped to provide consultative services to the producer-directors and the talent on matters regarding the suitability of curriculum points. This position would provide the advantage of immediate reference as to the suitability and acceptability of material to be included in televised instruction. The second major role of this position would be to provide on-going "market testing" of instructional presentations emanating from the production center. It would be the responsibility of this person to establish a system whereby representative groups of teachers and students could be brought to the large group viewing room to react to and take part in the evaluation of programs scheduled for wide-scale distribution. This function would hopefully prevent the inevitable criticism leveled at educational television productions in the past: that a sufficient curriculum supervision was not present before, during and after the production of the program. In addition, programs in which educational points failed to meet the mark could be eliminated and redone before reaching the public or classroom.

Desired Training and Background:

This person should be on a level commensurate with the director of instruction of a medium to large sized public school district. He should be completely conversant with both elementary and secondary curriculum and in addition should be specifically conversant with the curriculum modes and recommendations of the State Department of Education. He should have training and experience in research and testing in educational television.

2. Film Tape Librarian

The responsibility of the film tape librarian would be to direct the flow of tape film traffic in and out of the studio. Essentially the production center will be feeding material to users in recorded fashion. Therefore, this librarian must have considerable amount of student assistance.

G. 3. Secretaries and Stenographic Help

a. Staff Secretaries: Executive Prodicer-Director (1)
Producer-Directors (3)

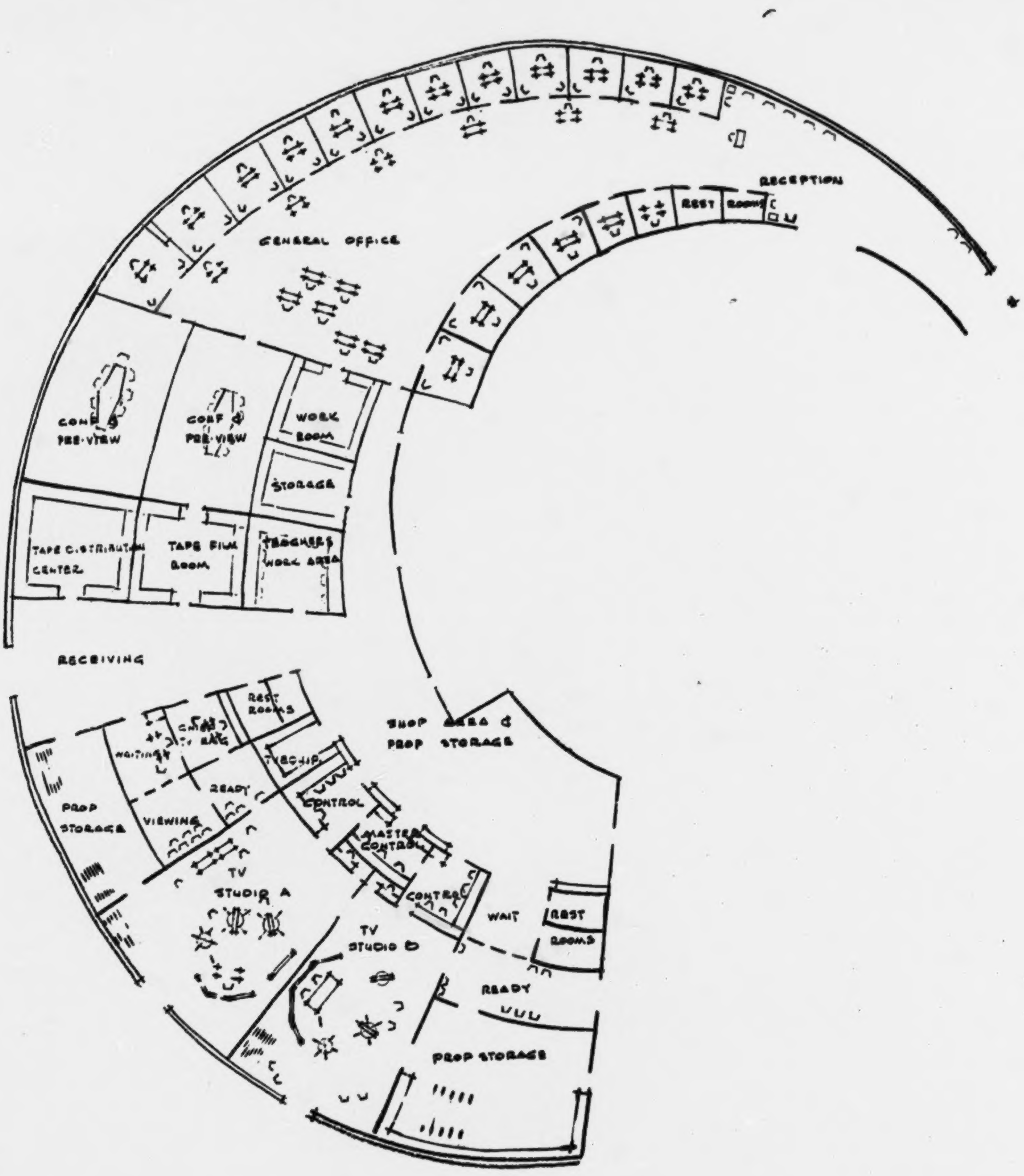
b. Stenographic Pool: For talent and production assistants (4)

c. Receptionist (1)

d. Temporary clerical assistance may be acquired from student assistants.

e. At least one production center tour guide should be constantly in attendance to direct visitors through the center at appropriate times.

TELEVISION DEPARTMENT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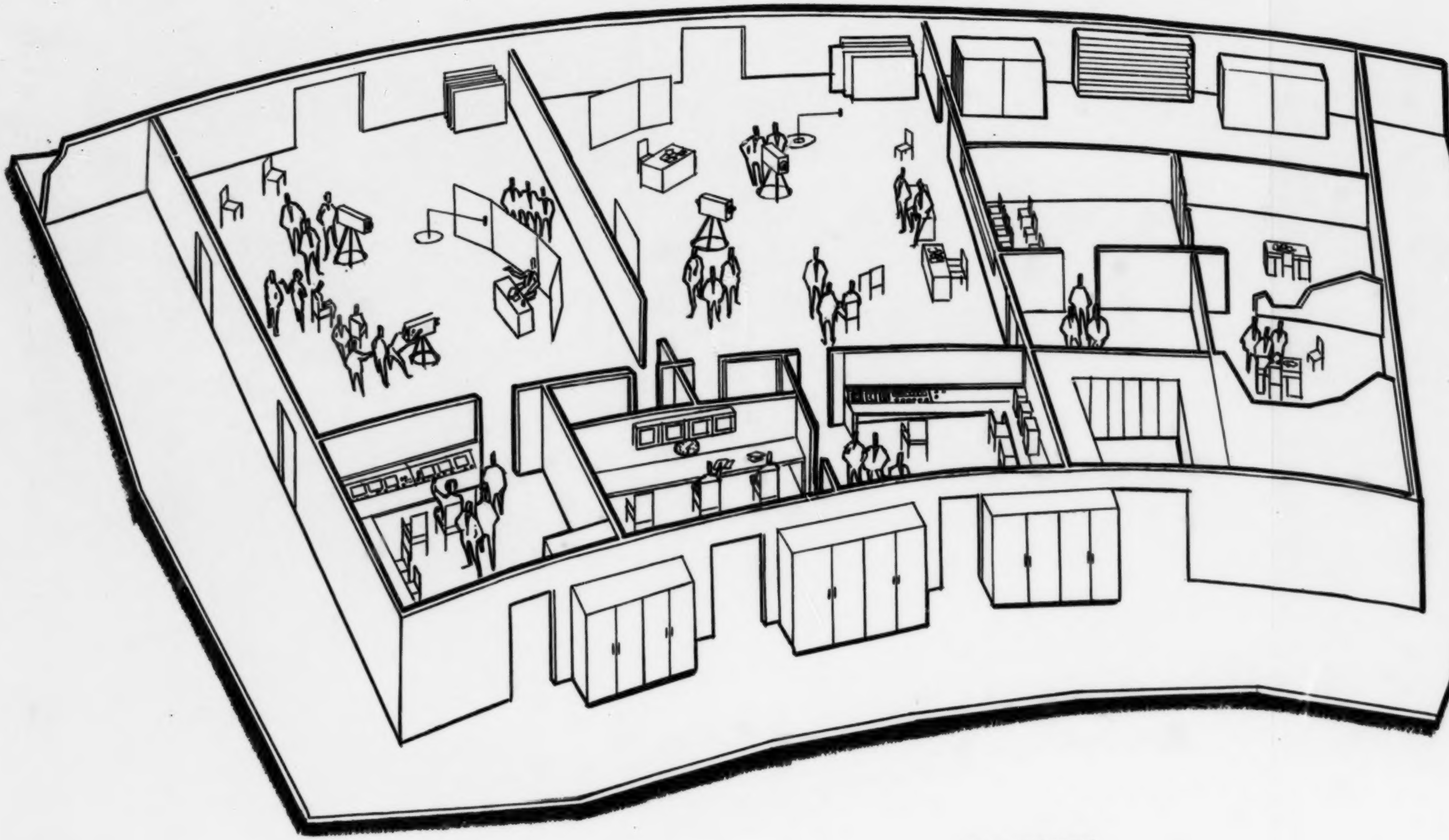
TELEVISION DEPARTMENT



T.V. STUDIO

A 500 SEAT AUDITORIUM

I. DESCRIPTION OF EDUCATIONAL USAGE

This auditorium will be used primarily by teachers and other educators coming together from different school districts for a common purpose. Meetings will be conducted here for the discussion of new curriculums, new teaching techniques, and pupil personnel problems. Inter-district meetings will be held in this auditorium to hear prominent professionals in specialized fields. Provision should also be made for its use by the community for a variety of public gatherings. It will be a place for adults to communicate under conditions as ideal as we can make them, It is to be, most specifically, a learning space. It is designed to seat 500 persons.

II. SPACE REQUIREMENTS

There are four general areas in this auditorium: (1) the lobby or foyer; (2) the auditorium itself; (3) the projection area; and (4) preparation, control and storage area. These specifications do not cover production areas to support the media capabilities of the auditorium, but such facilities should be readily accessible and preferably adjacent to the auditorium.

The following space requirements are seen as minimums and are not intended to be exact. The precise space allocations must necessarily be determined by the configurations of seating and the specific architectural design of the spaces.

A. Lobby area, including coat and book storage space and rest rooms: 1,000 square feet.

B. Auditorium: 5,000 square feet.

C. Projection area: 480 square feet.

D. Preparation and control area: 480 square feet.

This auditorium is to be specifically designed to provide for a fully integrated remote controlled instructional communications system including, but not limited to, rear screen projected television, 2 x 2 random access rear projection, 16mm motion picture rear projection, and overhead front projection.

The rear screen facilities shall include two rear screens, at least 12 feet square. Seating shall be installed no nearer than two screen widths from the surface of the screen and no further distant than six. In no case shall seating be installed at an angle greater than 50 degrees from lines drawn perpendicular from the center of each screen. Screens shall be elevated so that the full screen size is completely visible from any seat in the auditorium.

Seating shall be mounted on a floor of a stepped type in such a manner that no seated observer will be required to look more than 15 degrees above eye level to see the bottom of the screen.

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

The equipment for this auditorium can be conveniently divided into two categories: (1) Equipment required for auditoriums in general; and (2) Specialized equipment for this particular facility.

Much of the equipment in category one will be modified to meet specific needs, but attempts will not be made to provide approximate costs for these items. Specialized items in category two will be specified with approximate costs given.

A. General Equipment

1. Heating and air conditioning.

Auditorium shall be provided with heating and full air conditioning, to include complete control of heating, cooling, humidity, and air filtration. Particular care shall be taken with respect to both heating and air conditioning systems to insure that objectionable noises are not carried into the auditorium through the ductwork.

2. Seating.

Seating units shall consist of rows of continuous counters with fixed pedestal seats capable of being rotated 50 degrees on either side of center. Each position shall be equipped with an under-the-counter storage shelf located at one side so that it will not interfere with knee room.

3. Lighting

Lighting shall be designed to provide for three areas of need:

a. General illumination

b. Student counter tops

c. Lecture area

Particular care must be taken to insure that no ambient light falls on any projection screen. All lights should be controllable from the teaching lectern.

A. 4. Acoustical Provisions

This auditorium area will be provided with full carpeting to reduce the fricton and impact sounds of feet and falling objects and to improve the acoustical quality of the room. In addition, care should be taken to insure that no two wall surfaces are parallel. This provision reduces the possibility of "echo" caused by sound bouncing back and forth between parallel walls.

B. Specialized Equipment

The following section includes equipment which is peculiar to this kind of teaching facility.

1. Two 1/4' glass rear projection screens, 12' x 12', mounted side by side, in the front wall of the auditorium. The rear side of these screens forms the front wall of the adjacent projection area.

2. One lenticular front projection screen, at least 12' x 12' which can be lowered without obstructing the rear projection screens. Screen shall be electrically operated.

3. All of the following projection equipment is to be installed in the projection room behind the rear screen specified in (1) above. Projection equipment is all to be wired so that it can be remotely controlled from the lectern described. All projectors must supply a screen brightness of at least 10 lumens per square foot.

a. One 16mm motion picture projector, with reversing mirror attached. Projector must be capable of remote control.

b. There shall be one 2" x 2" slide projector for each of the two screens. Projectors shall be capable of complete remote control and sequential programming, forward and reverse. Projectors shall also be capable of random access. Magazines must accept at least 100 slides.

c. One television projector is specified which is capable of receiving and projecting not only broadcast signals, both VHF and UHF, but also capable of projecting, to the full size of the screen, any closed circuit signal fed to it.

B. 4. **Overhead Projector**

Located at and built into the lectern, the overhead projector shall have a stage accepting at least a 10" x 10" transparency and shall be used with the front screen described above.

5. **Sound System**

The sound system shall control all audio within the auditorium. It shall be wired to provide for sound inputs from the lectern, for motion picture sound from television sound, and tape recorder outputs. Sound shall be distributed within the auditorium at low comfortable volume levels by the use of multiple speakers located in the ceiling.

The sound system shall include:

a. Two professional type tape recorders capable of accepting 10" standard reels.

b. Complete wiring throughout auditorium.

c. Amplifier, preamplifier and all necessary controls.

d. Two condenser microphones mounted on the lectern and two wireless microphones for demonstration area usage.

e. Sufficient loudspeakers to blanket seating area with low volume, low distortion sound. Speakers should also be wired into the projection room.

f. A special intercom should be installed into the lectern by which the speaker can instantly communicate with projection room personnel.

6. **Lectern**

The lectern is planned as the teaching and control center of the auditorium. This is planned to place the lecturer in complete control of all facilities in the room. It will be provided with the following:

a. A well lit paper table at adjustable height and angle of inclination.

b. An easily read clock.

B. 6. c. A speech timer with warning light system.

d. A built-in stage to accept overhead projector.

e. Two condenser microphones on permanent type mounts.

f. Start-stop, advance and reverse, random access control of all slides in 2" x 2" projectors with simultaneous control of auditorium lighting to preset level to permit notetaking.

g. Start-stop and audio control of motion picture projector, with simultaneous control of auditorium lighting to preset level.

h. Start-stop of television projector with simultaneous control of auditorium lighting to predetermined level.

i. Master control of all audio gain.

j. Control of electric screen.

k. Electric pointer with focusable arrow.

7. Demonstration Area and Equipment

The front of the auditorium in the area adjacent to the lectern will be provided with a rotating stage divided into halves, one side being visible at a time. Each side is to be equipped with remote controlled CCTV camera whose picture can be easily carried by the TV projection system described previously. While one side of the rotating stage is visible to the viewers in the auditorium, the other will be contained within the preparation room. In this manner, rapid changes of demonstration material can be made within a single lecture, and closer scheduling of different programs can be made.

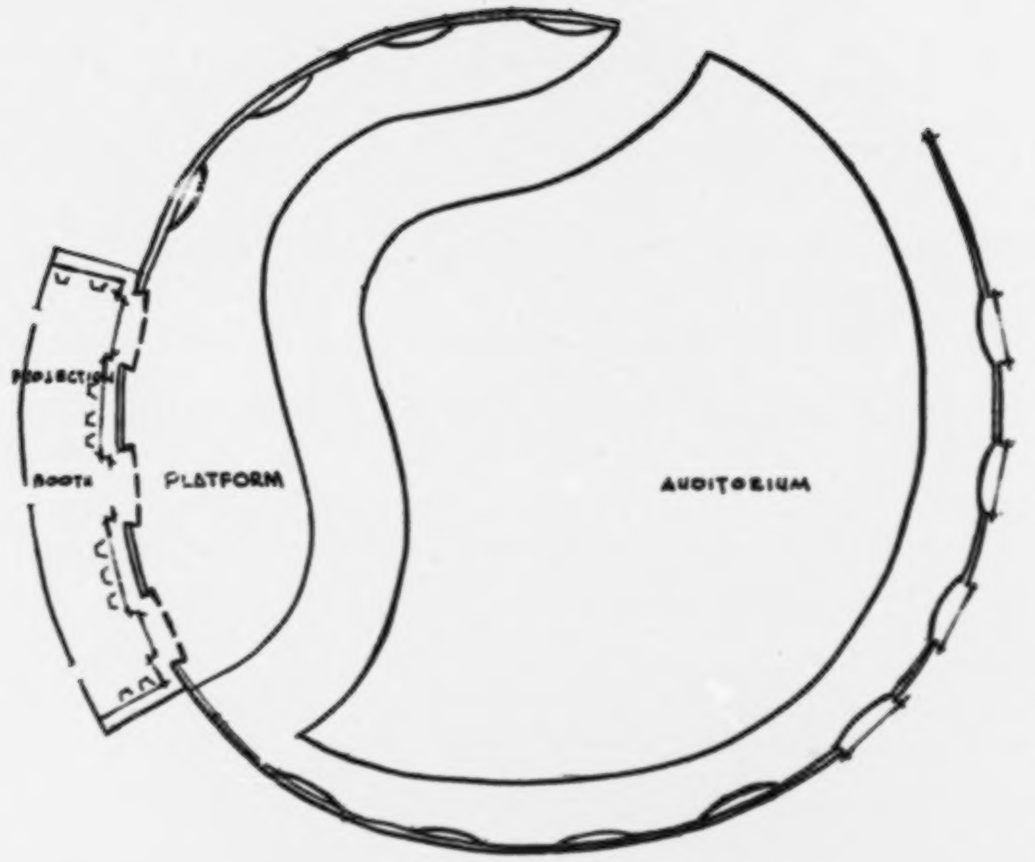
C. Estimated Costs of Specialized Equipment

1.	2- 12' x 12' 1/4" glass rear projection screens @ $12.00 per square foot	$3,456.
2.	1- 12' x 12' electric lenticular front screen	800.
3.	1- 16mm motion picture projector with reversing mirror, remote control capability, and instant sound start	7,500.

C.	4.	2- 2" x 2" random access, automatic forward and reverse, remote control, 100 slide magazine projectors @ $3,500.	$ 7,000.
	5.	Television projector, VHF, UHF, CCTV	2,595.
	6.	Overhead projector (built into lectern)	800.
	7.	Sound system	10,000.
	8.	Lectern (completely wired with controls)	5,000.
	9.	Electric pointer	70.
	10.	CCTV system for demonstration area	12,000.
	11.	Response system	25,000.
		Total	$75,221.

IV. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

Most of the equipment specified for this auditorium will be operated by remote control. It is all designed for centralized and simplified control at the lectern. At least one technician, however, should always be on duty in the projection room while the auditorium is in use. He must be thoroughly familiar with all the media systems in the auditorium and must be able to perform any necessary repairs on any equipment in the facility.


PROJECTION
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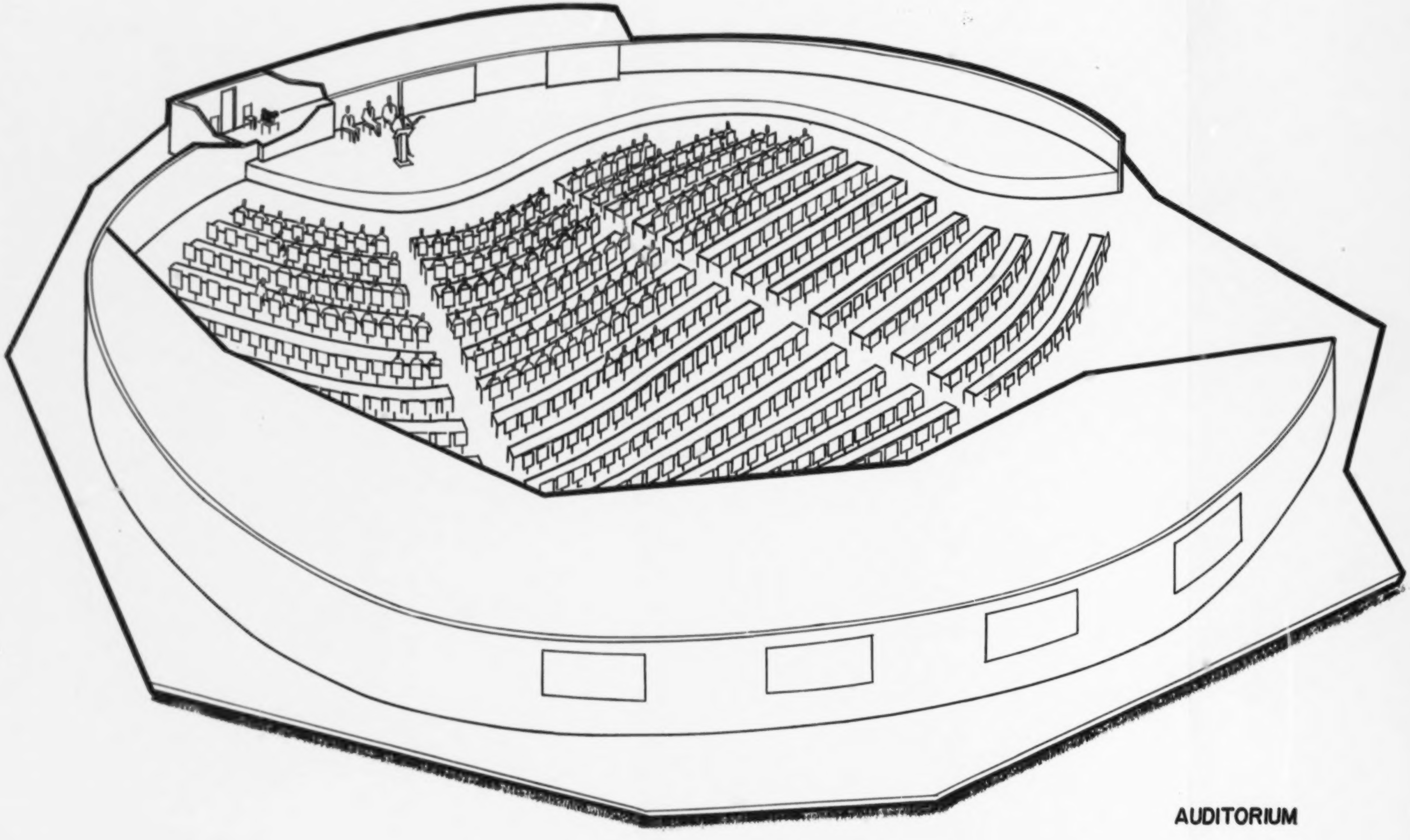


AUDITORIUM

GENERAL CONFERENCE ROOM

I. DESCRIPTION OF EDUCATIONAL USAGE

The conference room has become a symbol of the American way of getting problems solved. In American business, the presence of more than one person in any given space usually indicates that a conference is in session.

It is presumed that this conference room will be used for far more extended sessions than the auditorium described above. However, the same principles apply. The actual configuration of the room and the way it is equipped must reduce distraction to a minimum level, and focus the conferees on the problem at hand.

II. SPACE REQUIREMENTS

This conference room is based on comfortable seating for fifteen people. Different seating capacities up to approximately thirty can be calculated proportionately.

Approximate area needed: Conference Room-450 square feet
Adjacent Projection Room-225 square feet

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

As with the auditorium specifications, equipment will be divided into two general groups: (A) General conference equipment and (B) Specialized equipment for this facility. Approximate costs will be assigned for only the specialized equipment.

A. General Facilities and Equipment

1. Heating and Air Conditioning

The conference room shall be fully heated and air conditioned. All heating and air conditioning equipment is to be thermostatically controlled and capable of manual adjustment within the room. As with the auditorium, great care must be exercised in the duct design to insure that air conditioning and heating noises are kept well below disturbing levels.

A. 2. Seating and Tablespace

Chairs shall be upholstered and easily movable on casters or smooth glides. They shall be designed to provide for continuous comfort of two to three hours' duration. The chair should support its occupant in a comfortable, but upright and alert position. Chairs should swivel horizontally to provide for easy and noiseless change of position for the viewing of different display surfaces, and for easy eye contact between conferees.

Because of the wide variety of specific purposes to which a conference room of this type will doubtless be put, no fixed table configuration is specified. An ideal solution to the problem of needed table pattern flexibility would be a set of positive interlocking table modules which would permit the rapid change of seating and working arrangements.

3. Lighting

There are several lighting prerequisites for conference rooms of this type:

a. Cool operation

b. Even light

c. Low glare

d. Complete control

Rear screen projection facilities will be used for most display surfaces. Preset illumination levels should be provided for each type of projection equipment used. Care must, of course, be taken to insure that ambient light is shielded from the surfaces of all screens.

Finally, it is planned that virtually all wallspace not occupied by projection screens will be of a tackboard surface. So that attention may be centered as desired, separate lighting controls should be available for each tackboard area.

A. 4. Acoustical Provisions

This conference room is to be fully carpeted. There are to be no parallel wall surfaces. The room is to be windowless. All doors are to be equipped with rubber gasketing of the type used in professional recording studios. Noise reduction levels between this conference room and adjacent space should be at least 20 db. Special care, as mentioned above, shall be exercised in the baffling of air conditioning ductwork, particularly where such ductwork might carry noises from adjacent spaces into the conference room. Low hum ballasts should be selected to control fluorescent lighting (or alternately, ballasts can be mounted outside the room). Acoustic isolation of the projection room shall be accomplished by the mounting of glass projection screens in glazing compound.

The overall sound of this room should be essentially dead. The room should not "swallow" words making it necessary to raise one's voice, but neither should one be conscious of any traces of echo.

B. Specialized Equipment

The following section deals with specialized equipment which is peculiar to this type of facility.

1. Projection screens

Two 6' x 6' 1/4" glass rear projection screens shall be mounted side by side in the front wall of the conference room. Screens are to be set in glazing compound. The rear side of these screens forms the front wall of the adjacent projection area. One lenticular front screen of at least 6' x 6' dimension to be mounted in the ceiling and electrically controlled. Screen should be installed so that it does not obstruct rear screens when lowered.

2. Projection equipment

All of the following equipment is to be mounted in the projection room adjacent to the conference room behind the rear screens specified in (1) above.

a. 16mm motion picture projector with reversing mirror. Sound must be available instantaneously for remote control.

B. 2. b. Two 2" x 2" slide projectors shall be installed, one for each screen. They shall each be capable of random access and sequential programming. Projectors must be equipped for remote control.

c. One television projector capable of receiving and projecting VHF, UHF and all closed circuit images fed to it.

3. Control table

In section A.2. dealing with seating, reference was made to a set of interlocking table modules which can be arranged into a variety of physical configurations. One such table should be fitted with all lighting and projection controls and with an overhead projector as well. Control cable for this console table would be wired with matching floor and wall connectors at several points within the conference room. In this way, the interlocking table flexibility of the room can be maintained without loss of media control.

As with the auditorium, light levels would be preset for each type of projection situation and would automatically be reduced to the preset point when any projector is used.

4. Sound system

A complete stereophonic sound system shall be provided through which motion picture sound and television sound shall be fed. This system shall include a pair of professional stereophonic tape recorders and a turntable assembly capable of reproducing the highest quality sound from disc recordings. Floor and wall mounted microphone connectors shall be installed to facilitate the easy placement of microphones for recording conferences. All microphones shall be of low impedence, broadcast quality.

Sound shall be reproduced through a pair of loudspeakers of recognized high fidelity quality such as those of the acoustic suspension type. A master volume control should be provided on the control table described in 3 above.

Since a number of these conference rooms are planned and tape recording facilities will no doubt be a requirement for all of them from time to time, consideration should be given to a centralized sound recording room equipped with a number of recorders and wired for

B. 4. (cont'd.)

direct recording and playback to and from any conference room. This scheme would avoid the duplication of much expensive recording equipment. An important need with this system, however, is instant telephone communications with the central recording studio and, of course, reliable and appropriate staffing.

5. Display surfaces and chalkboards

All wall space, floor to ceiling, with the exception of screen surfaces should be constructed of tackboard material. This material should have acoustic absorption qualities as well. Portable chalkboard surfaces should be available and should hook onto wall surfaces when necessary. The use of chalkboard should be considered temporary and should not be encouraged by its permanent installation, the overhead projector filling this need better in almost every way. It is recognized that some individuals find it extremely difficult to adjust to the use of the overhead projector. For this reason, temporary use of chalkboard surfaces should be available.

C. Estimated Costs of Specialized Equipment

1.	2- 6' x 6' 1/4" glass rear projection screens @ $12. per square foot	$ 864.
2.	1- 6' x 6' lenticular front screen, electrically controlled	500.
3.	1- 16mm motion picture projector with reversing mirror and instant sound start for remote control	700.
4.	2- 2" x2" projectors with random access and remote control @ $900.	1,800.
5.	Control table with built-in control panel and wiring to lighting, sound, and projection, with overhead projector	3,000.
6.	Sound system	3,500.
7.	Display surfaces and chalkboards	2,000.
	Total	$12,364.

IV. PERSONNEL REQUIREMENTS

A conference room of the type specified above should have an electronics specialist on duty in the projection room, whenever the room is in use. He should be able to accept orders for its use, arrange tables in any kind of pattern requested and set microphones to record sessions as required. This person should be responsible for the proper functioning of equipment at all times.

GENERAL GRAPHICS

I. DESCRIPTION OF EDUCATIONAL USAGE

The Graphic Arts Department should provide the necessary personnel, facilities, equipment, materials, and funds for the planning and the preparation of all graphic, photographic, audio, and specialized instructional materials not available commercially, or having a local emphasis and considered necessary for the instructional programs of the schools.

In addition to preparing instructional materials, it should be anticipated that the services also would be utilized for the preparation of materials required for administrative needs - visuals for presentation, reports, documenting events, etc.

It should also be a primary purpose of this service to provide in-service instruction for teachers so they might prepare their own simple and inexpensive audio-visual materials. The actual follow-up preparation work by teachers should be done in their respective schools. The professional staff of the Media Production Services should advise local schools concerning the purchase of production equipment and assist in setting up working facilities.

II. SPACE REQUIREMENTS

A. Administrative area:

Office space 20' x 30' for administrative head, communications coordinators, secretaries.

B. Planning, Conference, and Preview area:

Two conference rooms (one 20' x 30'; other 12' x 30') equipped with chalkboards and corkboards to serve as display surfaces and storyboards. Facilities for projection - built-in screens, conduit for speakers, and remote control lines, light control, etc.

C. Graphics area (air conditioning desirable):

A graphics workroom (30' x 40') and adjoining storage area (10' x 15'). The workroom to include counter-top space for equipment and storage beneath; floor to ceiling cabinet storage in one area; two sinks; air pressure inlet; vent for diazo machine exhaust; an area of room in which light can be controlled (for using light-sensitive reproduction materials); electrical outlets above counter and along wall; 220 volt provided for major pieces of equipment.

C. (cont'd.)

The storage area requires cabinet and shelf storage space; temperature control for materials.

NOTE: Graphic and photographic areas should be adjacent for best coordination of work.

D. Photographic area (air conditioning essential):

A still photo studio (30' x 30'), a motion picture studio (30' x 40'), a copying room (10' x 15'), two film loading rooms (5' x 8'),a negative developing room (8' x 10'), two printing darkrooms (10' x 12'), a print finishing room (12' x 20'), a chemical mixing area combined with a storage area (10' x 15').

The still photo studio should be windowless, acoustically treated and soundproofed; ceiling height 14'; located on the ground floor with a large exit door; supplied with six (6) 30-amp. 110 volt circuits with outlets spaced around the room; a counter top with locked storage below along part of one wall; a sink; one wall covered with corkboard and other two walls painted but clear.

The motion picture studio should have facilities similar to those for the still photo studio and be separated from it by an adjustable, soundproof partition.

The film editing room to include two built-in tables (3' x 8') with storage shelves above the full length of each wall; tables to have a 6" x 18" insert of opal glass set in the middle near the front through which a light below can transmit up through the table for film viewing; a built-in projection screen; darkening; electrical outlets.

Two film loading rooms to have a counter top with storage below and cabinets above; must be light tight rooms; electrical fixture for two safelights and white light in ceiling.

The negative developing room to have a counter top along one wall with storage below and a deep stainless steel, acid-proof sink along opposite wall with shelf above and storage below; hot and cold, filtered, and temperature-controlled water for sink; electrical outlets above the sink and fixture for two safelights and a white ceiling light; must be light tight room. This room can be converted to a printing darkroom, if necessary.

D. (cont'd.)

The two printing darkrooms to have counter tops along one wall with closed storage below; stainless steel and acid-proof deep sinks on opposite wall with shelf above and closed storage below; two sets of faucets with filtered and temperature-controlled water; four sets of two each recessed electrical fixtures in ceilings for safelights and additional for white light; lights controlled by switches beside door so that one of each pair on same switch; electrical outlets provided above counters and above sinks; rooms light tight with light-trap entrances.

The print finishing room to have a counter along one wall with storage above and below; a small stainless steel sink along other wall; a drying cabinet built in with forced air circulation and a heating element; 220-volt outlet for print dryer and large print washer.

The chemical mixing room to have storage shelves along one wall; stainless steel, acid-proof sink along one wall with counter top; hot and cold filtered water with temperature control.

The storage area to be a closet with open and closed shelving areas. If building is not air conditioned, temperature in this room to be controlled to maintain 55°-60° F.

E. Audio area:

Three recording rooms (one 8' x 10'; other two 8' x 15') adjacent to a control and dubbing room (10' x 12'). The smallest recording room should be next to motion picture studio with a double glass partition between. Glass partitions or glass windows in sound-proof doors look out to control room.

Each recording room to be acoustically treated and sound-proofed, built-in counters with storage below along one wall; electrical outlets above counter and along walls; conduit provided to connect each room to control room and one room to motion picture studio.

Control and dubbing room to have equipment installed along one wall and a short counter with storage below along adjacent wall; multiple electrical outlets provided along walls and above counter.

F. Shop area:

A workroom 30' x 40' with general area for wood and plastic work; 10' x 14' area for metal work; 6' x 10' paint spray room; 8' x 10' storage area; 10' x 12' area for plaster work; air pressure inlets (general area, metal area, paint area); two sinks (general area and in plaster room); a ventilation system to draw off dust, sawdust, etc.; built-in storage cabinets along one wall of general area and counter tops with storage area below in metal and plastic areas; special shelving in storage area; electrical outlets throughout areas.

G. Facilities for In-Service Training

A large workroom (30' x 40') and adjoining storage room (10' x 30').

The workroom to permit classroom and laborator activity by 20 students; a 30" deep counter-top along one wall with open shelves below; closed cabinet-shelf storage along rear of room for student work; sink with formica drain area; spaced electrical outlets along counter and walls with 30-amp circuits; front of room covered with magnetic chalkboards and side wall covered with cork; facilities for projection of all types necessary; darkening, light control, built-in projection screen; conduit for speaker and remote control cords.

The storage room to have some open and some locked cabinets; a counter with drawers and cabinets below and above.

III. MATERIALS TO BE PREPARED

A. In the Graphics area:

charts - graphs - posters
displays - exhibits
mountings - laminations
design - layouts - artwork
duplicate copies of original materials
masters for volume duplication
printed materials
transparencies for overhead projection
titles and animated materials for films and television

B. In the Photographic area:

black-and-white negatives - contact prints - enlargements
2" x 2" color slides and duplicates
35mm filmstrips
transparencies for overhead projection
8mm and 16mm motion pictures - silent/sound; single concept/complete topic

C. Audio area:

original tape recordings
recordings to accompany slides, filmstrips and motion pictures
duplicates of recordings for multiple copies

D. Shop area:

models - mock-ups
plastic operative devices and transparencies
dioramas - displays - exhibits

NOTE: All materials prepared by the Media Production Services should be catalogues, filed, and distributed from the Instructional Materials Center of the Regional Communications Center. Original artwork, photographic negatives, masters, and in some cases first copies, will be indexed and filed in the office of the Media Production Services.

IV. MAJOR METHODS AND TECHNIQUES TO BE SUPPORTED

A. In the Graphics area:

mounting	-	dry mounting cloth-backing rubber cement laminating
lettering	-	by hand bold-faced typewriter stencils (Wrico) mechanical device (Leroy) photo-composing prepared letters (dry transfer, cut-outs, etc.)
coloring and shading	-	felt pens colored inks air brush adhesives

A. (cont'd.)

- artwork -
  - hand drawn
  - clip books
  - opaque enlarging
  - Lacey Luci enlarging
  - paste-ups
  - acetate cells (titles, animation)
- masters for duplication -
  - spirit duplicator
  - translucents for diazo process
  - mimeograph
  - offset plates
- duplication (single or multiple copies) -
  - heat process (Thermo-Fax)
  - photocopy
  - spirit duplicator
  - diazo
  - mimeograph
  - offset printing
- transparencies -
  - handmade
  - heat process (Thermo-Fax)
  - photocopy
  - diazo
  - mounting

B. In the Photographic area:

- black-and-white-stills -
  - filming (studio, location)
  - close-up copying
  - film processing
  - contact printing
  - enlarging
  - slide-making

NOTE: Because of the special skills required, amount of time involved, and special facilities and equipment, it is recommended that all color work (processing negatives, printing negatives, processing 35mm reversal film to slides) be handled on contract with outside vendors.

B. (cont'd.)

2" x 2" color slides - filming (studio, location)
close-up copying
duplicating slides

35mm filmstrips - converting black-and-white stills and/or 2" x 2" slides to filmstrip form
duplicating copies

NOTE: The preparation of filmstrips requires special, carefully-aligned equipment that is not easy to obtain. For many purposes slide series should be suitable, especially with the flexibility of adding or changing slides. For large numbers of copies, an outside service or special equipment becomes necessary for filmstrip preparation.

transparencies - photo masters for graphic reproduction
high contrast methods
black-and-white continuous tone methods
mounting

8mm and 16mm motion pictures - planning - scripting
filming (studio, location)
editing
titles and effects
sounding
conforming original film
preparing for laboratory services

NOTE: All processing and printing of motion picture footage should be handled by contract with outside vendors.

C. In the Audio area:

recordings - original on tape
duplicates by dubbing
mixing two or more tracks
magnetic film for motion pictures

D. **In the Shop area:**

techniques of working with plaster, woods, plastics, metals, and paints, to include -
modelling
carving
forming
assembling
sawing
drilling
sanding
planing
printing
assemble displays and exhibits

V. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

A. Administrative area (to include office equipment for all personnel - one desk, filing cabinets, and storage cabinets in each area).

B. Planning, conference and preview area

2 sets conference tables and chairs Equipment for projection of all forms available from Instructional Materials Center supply	
Total	$400.

C. Graphics area

4 drafting tables and stools	600.
1- 3' x 8' heavy duty work table	200.
1- 2' x 4' light table	175.
1 bold-faced typewriter	150.
Lettering stencils	150.
Mechanical lettering devices	400.
1 photocomposing machine (20 fonts)	2,500.
1 Lacey-Luci type enlarging and reducing machine	1,500.
1 air brush	75.
1 diazo reproduction equipment	1,600.
1 mimeograph stencil reproducer	2,000.
2 paper trimmers (1 with stand)	250.
1 photocopy equipment	350.
1 heat process (Thermo-Fax) equipment	350.
Miscellaneous small equipment	250.
Total	$11,050.

D. Photographic area:

3 tape recorders	3,600.
2 view cameras (4" x 5", 5" x 7")	450.
2 press-type cameras	600.
3- 35mm cameras	500.
1- 2-1/4" x 2-1/4" camera/additional lenses	350.
3 tripods, still photo	150.
1 tripod, motion picture	200.
4 light meters	100.
2 sets close-up lenses	75.
1 slide duplicator equipment	350.
Lighting equipment	2,000.
4 polecat supports	100.
1 print washer	250.
1 print dryer	350.
1 chemical mixing tank, stainless steel with stirrer and motor	80.
1 refrigerator	200.
1- 8mm motion picture camera and motor	250.
1- 16mm motion picture camera and motor with extra lenses	800.
3 enlargers (2- 4" x 5", 1- 2-1/4" x 3-1/4") with extra lenses	1,000.
3 timers	75.
1 contact printer	150.
Motion picture editing equipment	750.
1- 16mm magnetic sound projector	800.
1- 8mm magnetic sound projector	300.
Miscellaneous equipment	250.
Total	$14,730.

E. Audio area:

3 tape recorders, professional quality	1,800.
3 dynamic-cartioid microphones and stands	290.
1 tape duplicating system (Ampex)	4,270.
1 bulk eraser	100.
1 pre-amp mixer	150.
Miscellaneous equipment	50.
Total	$6,660.

F. Shop area:

1 drill press	230.
1 scroll saw	220.
1 band saw	400.
1 circular saw	450.
1 sander	500.
1 grinder	170.
1 belt finishing machine	300.
1 disc finishing machine	250.
1 lathe	400.
1 watchmaker's bench	50.
1 potter's wheel	450.
1 drafting machine	300.
1 electric hand tool	300.
1 spray gun	80.
1 dry mount press	150.
1 kiln	130.
1 furnace	50.
1 metal brake	300.
1 air brush	50.
1 dust collector	80.
3 storage bins	80.
1 light table	110.
1 welding bench	150.
1 welding cart	150.
1 hand tool	100.
1 paper cutter	40.
Total	$5,490.

G. Equipment and Operating Expenses for In-Service Training:

The workroom should be equipped with the following equipment:

12- 30" x 6' formica-topped folding tables	
24 chairs	
1 dry mount press	200.
1 bold-faced typewriter	150.
Stencil guides (Wrico)	75.
1 spirit duplicator	150.
1 Thermo-Fax machine	350.
1 photocopy machine	350.
1 school-type diazo machine	350.

G. (cont'd.)

2- 35mm cameras	300.
1 copy stand with lights	60.
8 floodlights and spotlights with stands	125.
	$2,110.+

Projectors (2" x 2", 16mm and 8mm motion picture, opaque, and overhead), recorders and record players should be available on order from the Instructional Materials Center supply.

VI. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

Numbers following each category indicate the number of personnel recommended. These are guides based on anticipated workload.

A. Administrative Head (1)

Teaching experience; practical experience in all production areas; experience in working with educators in solving instructional problems using educational media; administrative abilities; good personnel relations.

B. Communications Specialists (2)

Qualifications similar to those above.

C. Graphic Artists (4)

Skilled in all indicated areas of graphics work; some knowledge of basic photographic techniques is desirable; at least one person should be assigned to preparing materials for television use and thus become aware of its special requirements.

D. Photographers (4)

Two people particularly skilled in still photography, but can also do motion picture work as required; other people more qualified in motion picture work, but can do still photography as required.

E. Audio (1)

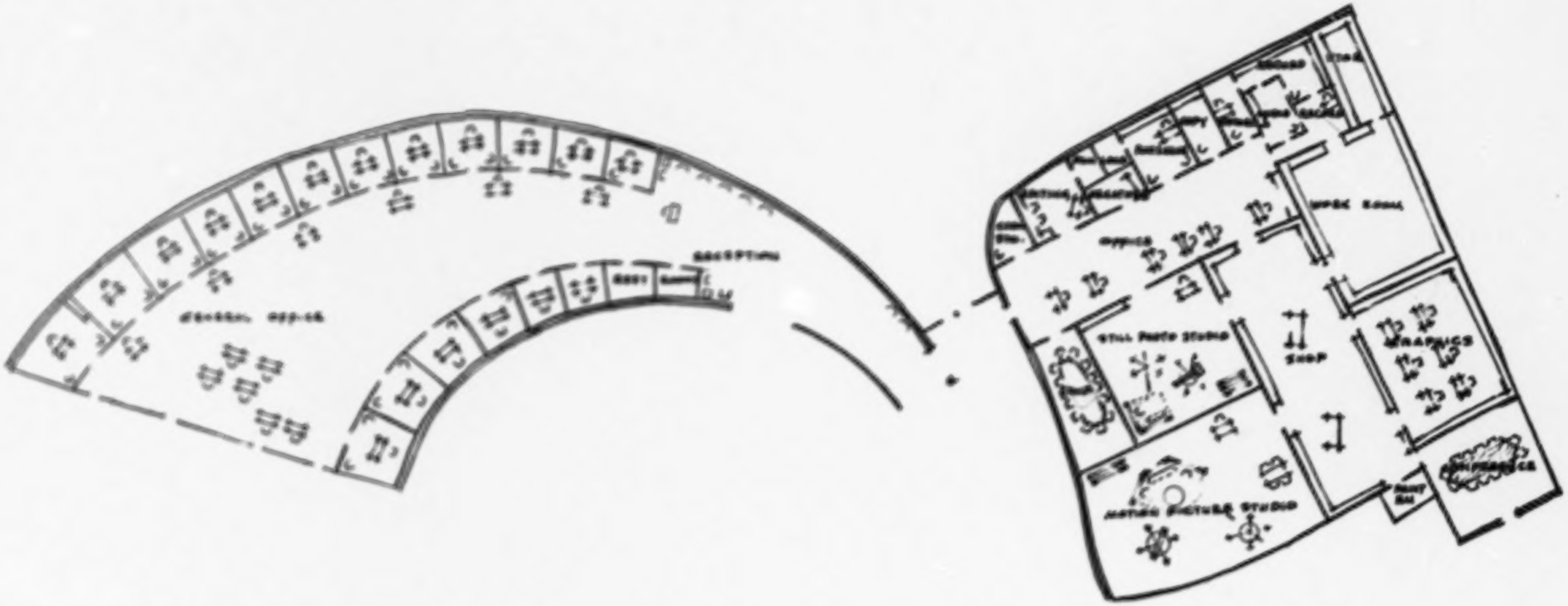
Audio engineer - skilled in all aspects of sound recordings and uses of appropriate equipment.

F. Shop Men (2)

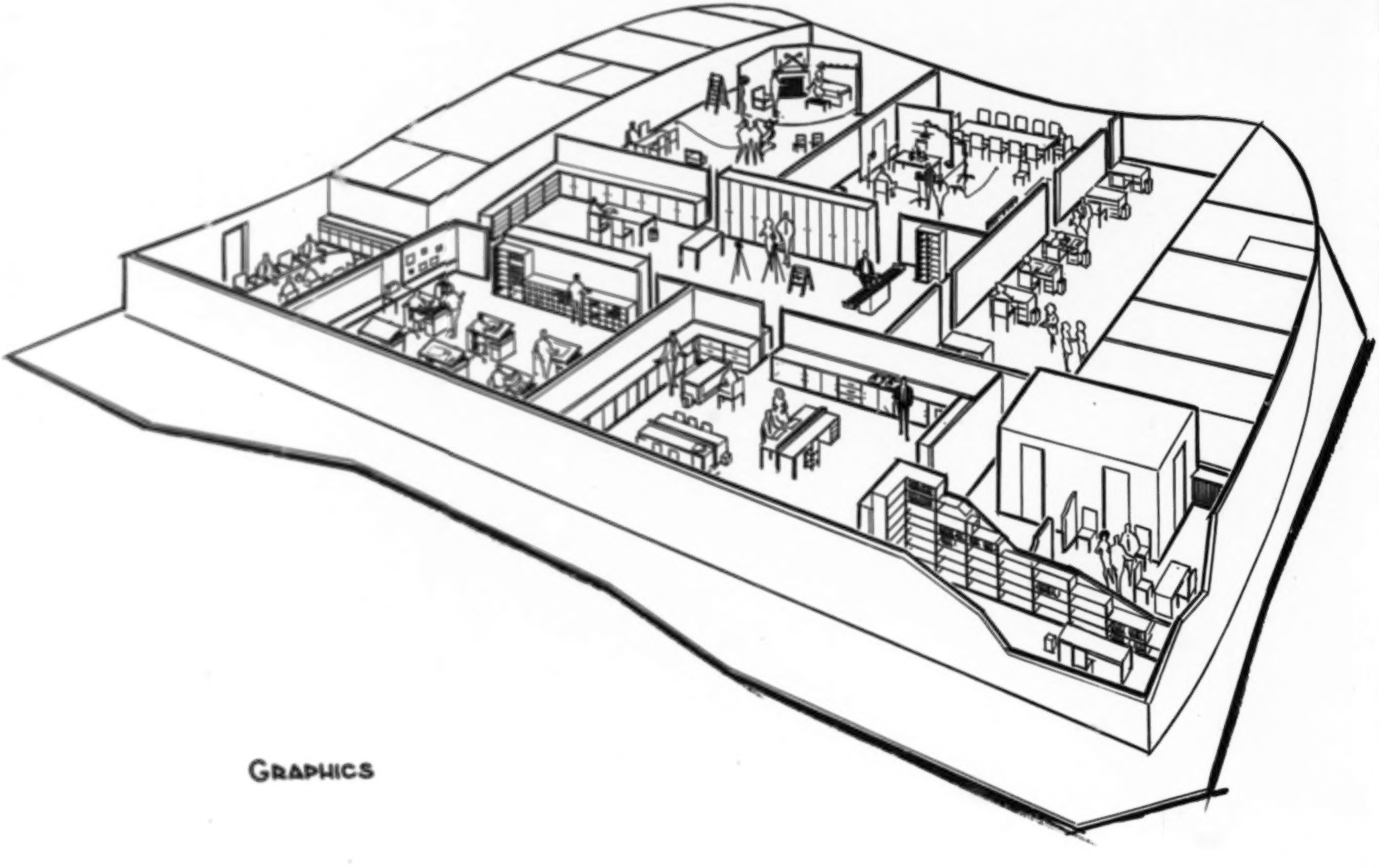
Craftsmen (cabinet maker, machinist, metal worker) with experience in areas of paints, metals, plaster, woods and plastics.

G. Secretaries (2)

Besides regular secretarial work, should be capable of typing scripts, preparing titles with typewriter and simple lettering equipment, and performing such other tasks as mounting slides, operating simple reproduction equipment, etc.


GENERAL OFFICE
RECEPTION
OFFICES
WORK ROOM
STILL PHOTO STUDIO
SHOP
GRAPHICS
MOTION PICTURE STUDIO
CONFERENCE

GRAPHICS DEPARTMENT



GRAPHICS

PUBLICATIONS DEPARTMENT

I. DESCRIPTION OF EDUCATIONAL USAGE

The Bureau of Publications must be capable of turning out professional publications for the center and (conceivably) for the member districts. It is a small, but professional, editing and printing operation and will be the center for dissemination of information by, and about, the center. The key personnel should have the training and knowledge to do the kind of editorial and design work needed.

The Publications Department is not a training unit, therefore the specification of personnel and space is contingent upon production requirements. This department will not produce such student publications as year books, newspapers and literary magazines.

Certain technical services can be provided better by commercial sources when large volume repetitive operations are required. For example, it is not recommended that hard back binding be accomplished, nor that photo-engraving be done. Further, the production of specialized forms -- such as one shot carbon interleaving -- should not be attempted.

It is assumed that no reproduction of routine correspondence nor student record duplication would be done in this Center; this type of service would be provided on an individual school basis.

Continuous tone photography facilities will be supplied by another department in the Center and the photography in the Publications Department will be solely of the Process type.

The art section recommendation here is for the Publications Department use only.

To serve the client with the products and services enumerated above, certain internal functions must be provided. They consist of:

- A. Administration
- B. Supply
- C. Copy Preparation
- D. Make-up
- E. Printing
- F. Finishing and Delivery

A statement of function, equipment and cost, utilities required, space needed and personnel required follows for each of these internal functions.

A. Administration

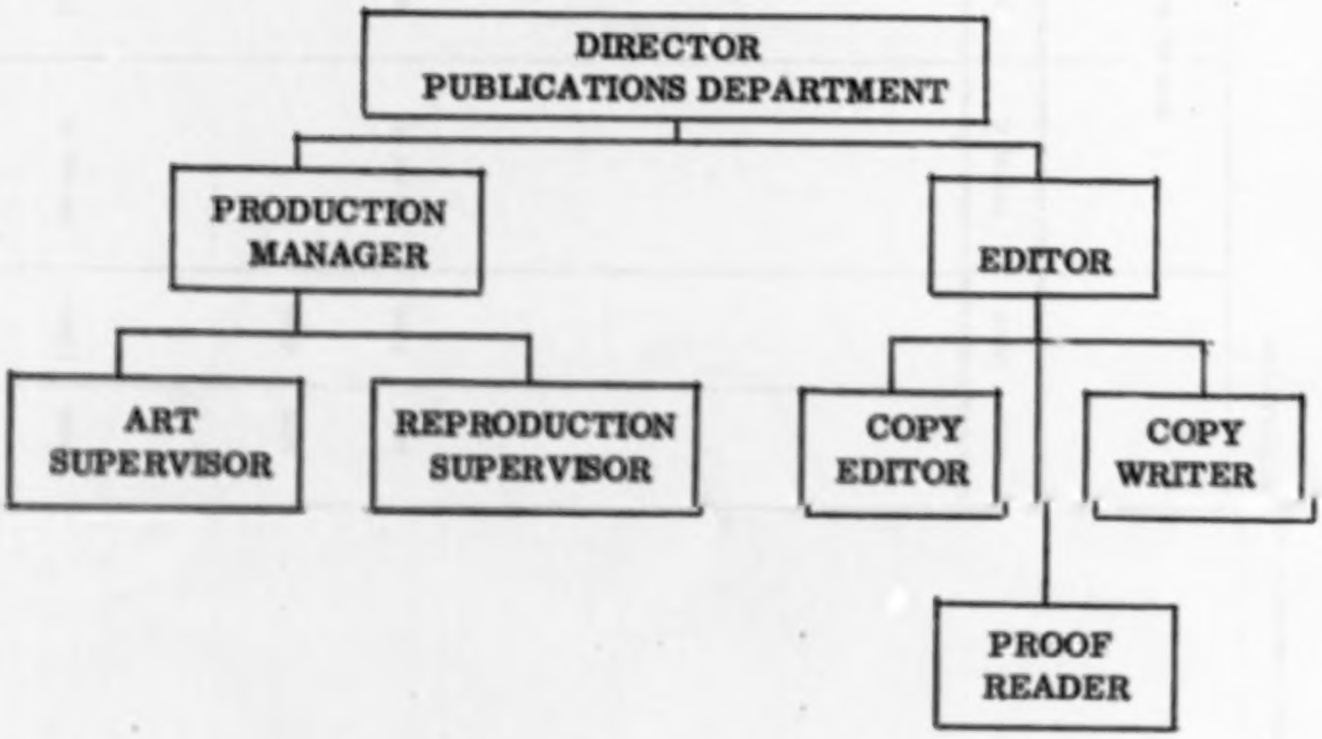
1. Function

(a) To assist the client in planning publications.
(b) To establish and maintain quality standards.
(c) To establish departmental policy and supervise its execution.
(d) To work with other departments in the Communications Center in solving instructional problems.

2. Facilities required -- for a detailing of equipment and cost, utilities, and space, see TABLE I.

3. Personnel required

(a) Detailed description on TABLE II.
(b) A suggested administrative pattern:


DIRECTOR
PUBLICATIONS DEPARTMENT
PRODUCTION MANAGER
EDITOR
ART SUPERVISOR
REPRODUCTION SUPERVISOR
COPY EDITOR
COPY WRITER
PROOF READER

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
ADMINISTRATIVE AREA*						
Office furniture	$6000	11500	550 sq. ft.	1100 sq. ft.	Telephone and inter-com service to each office with connection to other departments in the Center and to the work areas in this Department.	
Desks Chairs File cabinets Book case Misc.						
Office machines	2000	4000			One 110 V circuit in each office in addition to normal lighting requirements.	Desk mounted - no floor space.
CONFERENCE AREA						
Furniture	1000	2000	150 sq. ft.	300 sq. ft.	Two 110 V circuits in addition to normal lighting.	
Table Chairs Display easels Tack boards Etc.						
* Director Production Manager Editorial Coordinator Art Supervisor Reproduction Supervisor Editor Writer Proof reader 3 Secretaries 1 File clerk						
TOTALS for Administration	9000	17500	700 sq. ft.	1400 sq. ft.		
TOTAL SPACE REQUIRED			2100 sq. ft.			

TABLE I Facilities Required — ADMINISTRATION

TITLE	JOB DESCRIPTION	QUALIFICATIONS	QUANTITY
DIRECTOR OF PUBLICATIONS	Establish and maintain policies and procedures for the Publications Department. Supervise the Department. Work with clients and other Department Directors in solving instructional and procedural problems. Coordinate the work of the Production Manager and Editorial Supervisor.	Masters degree in Communications with emphasis on Journalism and the Arts. Experience in the publishing field. Teaching experience desirable.	One full time.
EDITOR	Work with client on preparation of materials for reproduction with regard to content and format. Coordinate the work of writers, editors and proofers. Approve finished layouts for printing.	College graduate with emphasis in English and Journalism. Editorial and copy writing experience. Teaching experience desirable.	One full time.
COPY EDITOR	Work with Art Supervisor in planning format and layout of copy within format. Work with writer on clarification of text and need for illustrations. Edit copy from outside sources.	College graduate, liberal arts, concentration in English and Journalism. Experience in editing educational publications.	One full time.
COPY WRITER	Work with clients, converting their ideas into readable copy, and suggesting points that may require illustrative material.	College degree, liberal arts, concentration in English. Writing experience.	One full time.
PROOF READER	Read bodies of type from proofs and finished layouts for correct spelling, punctuation, original against copy. Make certain that copy conforms to job specifications.	College degree in English. Copy reading experience.	One full time.
PRODUCTION MANAGER	Supervise all production areas. Coordinate all functions necessary to insure the flow of work from inception to finished product. Maintain all stock and ordering.	College graduate with emphasis in Industrial Technology. Experience in printing operations. Demonstrated ability as a supervisor.	One full time.

TABLE II Personnel Required — ADMINISTRATION Page 1 of 2

TITLE	JOB DESCRIPTION	QUALIFICATIONS	QUANTITY
ART SUPERVISOR	Work with Editor in planning format and layout. Supervise layout of art and type to editorial specifications.	Art school graduate or equivalent and five years experience.	One full time.
PRINTING SUPERVISOR	Supervise Make-up, Printing and Finishing and Delivery areas. Maintain schedules of work flow. Establish and maintain quality control procedures.	Technical training in a technical institute in reproduction processes. Knowledge of process photography, and silk screen printing. Two years shop experience.	One full time.
SECRETARY	Perform duties of reception, taking dictation and typing.	Shorthand and typing experience.	Three full time.
FILE CLERK	Perform duties of filing and reception.	Typing and filing experience.	One full time.

TABLE II Personnel Required — ADMINISTRATION Page 3 of 3

B. Supply

1. Function

(a) To receive, store and distribute all raw materials necessary to the operation of all sections of the Publications Department.

(b) To keep records necessary to the maintaining of an inventory.

2. Facilities Required -- for a detailing of required equipment and costs, utilities, and space, see TABLE III.

3. Personnel Required -- for a detailed description, see TABLE IV.

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
GENERAL SUPPLY AREA			Total 297 sq. ft.	Total 180 sq. ft.		
1 - Hand operated - Hydraulic Lift Truck (1000 to 2000 lb. capacity)	$500	1000	10 sq. ft.			Large, motorized truck would be available in total center area if needed.
1 - Flat Bed Truck - 24" x 48" (Wood or Steel)	60	80	8 sq. ft.			Approximately 750 lb. capacity.
1 - Flat Bed Truck - 30" x 60" (Wood or Steel)	100	150	13 sq. ft.			Approximately 1400 lb. capacity.
2 - Hand Trucks	40	80	4 sq. ft.			
9 - Units of Closed Steel Shelves 18" x 36" x 84"	360	630	45 sq. ft.			
3 - Units of Closed Steel Shelves 24" x 36" x 84"	90	180	18 sq. ft.			
4 - Units of Open Steel Shelves 30" x 48" x 84"	160.	240	40 sq. ft.			
4 - Units of Multi-Drawer Cabinets 12" x 30" x 36"	180	240	5 sq. ft.			These units stacked two high.
2 - Six Foot Stepladder	20	40	4 sq. ft.			
12 - Paper Skids			108 sq. ft.			Furnished by Paper Supplier. 24 Skids could be handled by double stacking.
OFFICE AREA			Total 36 sq. ft.	Total 24 sq. ft.		
1 - Secretary Style Desk w/Chair	200	250	20 sq. ft.		120 V	
2 - Four Drawer File Cabinets	120	150	8 sq. ft.			
2 - Office Chairs	40	60	8 sq. ft.			
1 - Typewriter	200	300				This would be on desk.

TABLE III Facilities Required — SUPPLY Page 1 of 2

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
COLD STORAGE ROOM			Total 25 sq. ft.	Total 25 sq. ft.	Refrigeration at 40°F and Humidity Control at 50%	
3 - Units of Closed Steel Shelves 18" x 36" x 84"	120	150	15 sq. ft.			
1 - Unit of Closed Steel Shelves 24" x 36" x 84"	45	60	6 sq. ft.			
1 - Storage Rack 15" x 42" x 84" (Wood or Metal)	50	75	4 sq. ft.			Built on the wall with adjustable Brackets for storage of 42" rolls of Diazo Materials.
Miscellaneous equipment for all Supply	100	200				Waste Receptacles and other small pieces of equipment.
TOTALS for Supply	2265	3465	358 sq. ft.	614 sq. ft.		
TOTAL SPACE REQUIRED			972 sq. ft.			

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TITLE	JOB DESCRIPTION	QUALIFICATIONS	QUANTITY
INVENTORY CLERK	Supervise the receiving, storing, and dispensing of all Raw Materials; Maintain Inventory Records and notify appropriate person when supplies are needed.	High School Education with fundamental typing ability and physically able to handle heavy weights.	One full time.
STOCK MAN	Assist the Inventory Clerk in the receiving, storing and distributing of supplies; with major emphasis being the physical handling of the materials.	High School Education with physical ability to handle heavy weights.	One-half time. (See TABLE XII)

TABLE IV Personnel Required — SUPPLY

C. Copy Preparation

1. Function

(a) To prepare units of work in a master copy form by layout, photography, and art processes.

(b) To keep records necessary to maintain inventory.

(c) To maintain a file of master copy for reference and re-use.

2. Facilities required -- For a detailing of equipment and costs, utilities, and space, see TABLE V.

3. Personnel required -- For a detailed description, see TABLE VI.

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
ART AREA			Total 320 sq. ft.	Total 300 sq. ft.	2 - 110 V circuits	With outside windows, overhead lights, air conditioning, inter-com, telephone.
2 - Drawing Tables	$120	240	12 sq. ft.			
2 - Taborets	80	140	6 sq. ft.			
2 - Airbrushes (1-A and 1-B)	75	120			Hose and Couplings	Suggest Thayer and Chandler.
Airbrush compressor	150	175	3 sq. ft.		110 V	May be replaced with compressed air.
File Drawers (6-drawer legal)	100	135	4 sq. ft.			
6 - Blueprint Cabinets	1200	1800	36 sq. ft.			Top to be used as work area. Suggest Formica covering.
Paper Cutter	50	75				Drop knife.
Light Table	100	200	12 sq. ft.		110 V	
Visualizer	300	350	8 sq. ft.		110 V	
4 - Storage Cabinets			54 sq. ft.			Art supply storage.
2 - Shelf units			20 sq. ft.			
2 - Fluorescent universal models	75	100			110 V	Drawing table lights. Could be bracket or pedestal.
Dry mount press	300	400			110 V	On top of counter unit.
Associated art equipment	300 (for both artists)	600				Includes "T" squares, triangles, drawing instruments, etc.
4 - Office Desks	450	800	40 sq. ft.			Two Artists, One Lin-O-type Operator, One Varitypet Operator.

TABLE V Facilities Required — COPY PREPARATION Page 1 of 3

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
AREA ART (Continued)						
4 - Office chairs	$100	200	60 sq. ft.			
4 - Side chairs	80	160	20 sq. ft.			
Varityper	2000	3000	4 sq. ft.		110 V	
Photo Typositor and associated equipment	2500	3500	9 sq. ft.		110 V	
Miscellaneous	15	30	20 sq. ft.			
PHOTOGRAPHIC AREA			Total 81 sq. ft.	Total 180 sq. ft.	2 - 110 V circuits	
Print washer	100	150			Hot and Cold water	Drum in water rotated and unit is table-top.
Print dryer	600	800	9 sq. ft.		110 V	
Film drying cabinet	400	500	6 sq. ft.		110 V	Table top.
Negative filing drawers	100	200	3 sq. ft.			Six drawers to hold 4" x 5" negatives.
Press camera (4" x 5")	400	600				
2 - Portable strobe lights for press camera	250	600				Both powered from same battery.
2 - Work Tables	200	300	30 sq. ft.			Units on casters and enclosed storage below.
2 - Storage Cabinets	300	400	10 sq. ft.			Built-ins to have doors.
Associated photography equipment	600	800				Safelights, print spotting equipment, trays, timers, etc.
Office Desk	100	200	15 sq. ft.			
Office Chair	45	50	4 sq. ft.			
Side Chair	20	40	4 sq. ft.			

TABLE V Facilities Required — COPY PREPARATION Page 3 of 3

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
PHOTOGRAPHIC DARK ROOM			Total 60 sq. ft.	Total 60 sq. ft.	1 - 110 V circuit	
Film Processing unit in water jacket	140	200			Hot and Cold water	Automatic temperature regulator.
Film Washer	70	90			Hot and Cold water	Automatic temperature regulator. (Could be same unit as above.)
Contact printer	300	600			110 V	12" x 15" printed area.
Enlarger	350	450			110 V	Condenser-type. 4" x 5" max. negs.
Counter (built in)			36 sq. ft.			Formica top with enclosed storage below.
Sink	450	600	24 sq. ft.		Hot and Cold water Drains	Fiber glass.
TOTALS for Copy Preparation	12,440	16,330	459 sq. ft.	621 sq. ft.		
TOTAL SPACE REQUIRED			1,080 sq. ft.			

TABLE V acilities Required — COPY PREPARATION Page 3 of 3

TITLE	JOB DESCRIPTION	QUALIFICATIONS	QUANTITY
COMMERCIAL ARTIST	Senior artist. Prepare art and copy for printing media.	Art school graduate or equivalent. Also at least five years working experience.	One full time.
COMMERCIAL ARTIST	Junior artist. Prepare art and copy for printing media.	Art school graduate or equivalent.	One full time.
PHOTOGRAPHER	Darkroom technician and on-location assignments.	Photographic school graduate or equivalent.	One full time.
LIN-O-TYPE OPERATOR	Type copy for printing processes.	Machine capability.	One full time.
VARITYPER OPERATOR	Type copy for printing processes.	Machine capability.	One full time.

TABLE VI Personnel Required — COPY PREPARATION

D. Make-Up

1. Function

   (a) To receive art and copy from other sources.

   (b) To prepare this material for the reproduction process by process photography, stripping, platemaking, composing, proofing, etc.

   (c) To maintain records consistant with the maintenance of an inventory.

2. Facilities required -- for a detailing of equipment and costs, utilities, and space, see TABLE VII.

3. Personnel required -- for a detailed description, see TABLE VIII.

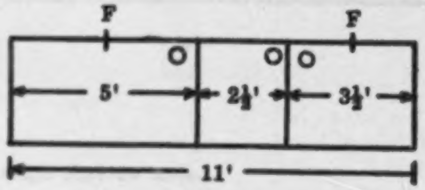
EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
COPY CAMERA — DARKROOM AREA			Total 62 sq. ft.	Total 81 sq. ft.	110 V	
1 - Stainless Steel Sink with separations as shown and with back splash and top shelf 30" x 11' x 5"	$500	800	28 sq. ft.		Hot and Cold water at two ends of sink with Temperature Control Units on each and with drains on all three sections.	
2 - Film Drying Cabinets	700	1400	18 sq. ft.		110 V	
Eight feet of Counter Type Work Area (24" deep)	100 (if not built in)	200	16 sq. ft.			Storage shelves under for film boxes. Would probably be built in.
Darkroom Accessories	400	800			110 V	Chemical Tanks, Trays, Safe-lights, Paper Cutter, etc. Would all sit on Counters or Shelves.
COPY CAMERA — COPY BOARD AREA			Total 90 sq. ft.	Total 157 sq. ft.		
20" x 24" Copy Camera (Darkroom Style)	4000	7000	90 sq. ft.		220 V	Included here because the majority of sq. ft. of equipment is to the front rather than into darkroom.
STRIPPING AREA			Total 41 sq. ft.	Total 148 sq. ft.		
1 - 30" x 40" Light Table with Tilt Top and Chair	200	300	13 sq. ft.		110 V	This would be used for opaquing.
1 - 30" x 40" Layout Table with Chair	500	900	14 sq. ft.		110 V	This would be used for stripping.
2 - Storage Cabinets with Counter Tops 18" x 54" x 30"	200	400	14 sq. ft.			One unit for each light table.
PLATE MAKING AREA			Total 37 sq. ft.	Total 71 sq. ft.		
1 - Flip-top Platemaker (24" x 32" Plate size)	500	1000	14 sq. ft.		110 V	
1 - Plate Developing Sink (24" x 36" Sink Area)	250	400	8 sq. ft.		Hot and Cold water.	
Five Feet of Counter Type Work Area (36" deep)	100	200	15 sq. ft.			Storage shelves under for plates, etc.

TABLE VII Facilities Required — MAKE-UP Page 1 of 3

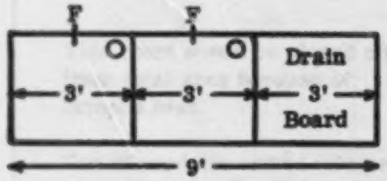
EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
PAPERCUTTING AREA			Total 62 sq. ft.	Total 78 sq. ft.		
1 - Automatic Paper Cutter	2000	5000	42 sq. ft.		220 V	
Eight Feet Counter Type Work Area (30" deep)	150	200	20 sq. ft.			Storage shelves under.
SILK SCREEN MAKE-UP AREA			Total 47 sq. ft.	Total 61 sq. ft.		
Stainless Steel Sink with separations as shown and with backsplash, top shelf and 3' drain shelf 30" x 9' x 5"	450	800	23 sq. ft.		Hot and Cold water to both sink areas with Temperature Control on both faucets.	
Flip-top Platemaker (21 x 25 plate size)	500	700	9 sq. ft.		110 V	This could also be used in platemaking when demands require.
Five Feet of Counter Type Work Area (36" deep)	100	200	15 sq. ft.			Storage shelves under.
LETTERPRESS MAKE UP AREA			Total 131 sq. ft.	Total 335 sq. ft.		
2 - Imposing Tables (27" x 39")	1500	2500	18 sq. ft.			
1 - Galley Cabinet (19" x 57")	150	400	8 sq. ft.			
1 - Cut Storage Cabinet (18" x 24")	150	400	3 sq. ft.			
1 - Adjustable Form Truck	75	300	5 sq. ft.			
1 - Linotype Machine	15000	20000	63 sq. ft.		440 V with vented exhaust	
1 - Secretary Style Chair and Work Table	50	100	7 sq. ft.			For use at Linotype machine.
2 - Type Storage Cabinets Single Tier	1000	2000	12 sq. ft.			
5 - Type Fonts	500	1250				Would be stored in Type Cabinet.
Metal Storage Rack	75	150	4 sq. ft.			For holding Type-Fonts for Linotype machine.

TABLE VII Facilities Required — MAKE-UP Page 2 of 3

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
Magazine Type Rack	200	350	9 sq. ft.			For holding Lead Ingots for Linotype.
4 Type Fonts for Linotype Machine	1400	2000				Would be in Rack above.
Tool Rack	50	150	2 sq. ft.			Would be built onto wall.
FOUNDRY ROOM AREA			Total 20 sq. ft.	Total 15 sq. ft.		This room would be closed off from total area because of furnace heat.
Furnace	2000	5000	12 sq. ft.		Natural gas with outside exhaust.	Conditioned air vented into room but with exhaust vent to outside.
Waste Metal Truck	100	300	4 sq. ft.			
Ingot Mold	100	500	4 sq. ft.			
Miscellaneous Equipment	200	500				Waste receptacles, timers, thermometers, etc.
TOTALS for Make-up Area	31500	56200	490 sq. ft.	946 sq. ft.		
TOTAL SPACE REQUIRED			1436 sq. ft.			

TABLE VII Facilities Required — MAKE-UP Page 3 of 3

TITLE	JOB DESCRIPTION	QUALIFICATIONS	QUANTITY
COPY CAMERAMAN	Operate Process Camera to Photograph and Develop both line and continuous tone negatives and opaque and strip-up same.	Graduate of Photo School or not less than two years experience.	One full time.
STRIPPER	Opaque, strip and mask negatives for offset printing.	Two years of experience.	One full time.
PRINTER'S APPRENTICE (LETTERPRESS)	Assist Letterpress operator in preparing type, etc. for use on the Letterpress	Two years experience or Graduate of Technical Training School.	One-half time. (See TABLE X)
PRINTER'S APPRENTICE (OFFSET)	Assist copy cameraman, stripper, printer and finisher in the various process of reproducing materials.	Two years experience or Graduate of Technical Training School.	One-quarter time. (See TABLE X)
PRINTER'S HELPER	Do manual work involved with assisting on machines and other odd jobs (mix chemicals, cut paper, etc.)	High School Graduate with Technical Apptitudes.	Three-quarters time. (See TABLE X)

TABLE VIII Personnel Required — MAKE-UP

E. Printing

1. Function

   (a) To receive materials prepared by Make-up and from other sources.

   (b) To reproduce these materials by letterpress, offset press, silkscreen, diazo, or xerography.

   (c) To maintain quality standards.

   (d) To maintain files of master materials for reference and reuse.

2. Facilities required -- for a detailing of equipment and costs, utilities, and space, see TABLE IX.

3. Personnel required -- for a detailed description, see TABLE X.

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
OFFSET PRINTING AREA			Total 159 sq. ft.	Total 538 sq. ft.		
1 - 17" x 22" Offset Press - Sheet Fed	7000	12000	20 sq. ft.		110 V	
1 - 11" x 17" Offset Press - Sheet Fed with Chain Delivery	4000	7000	10 sq. ft.		110 V	
1 - 10" x 15" Offset Press	3000	5000	10 sq. ft.		110 V	
3 - Units of Closed Steel Shelves 18" x 36" x 84"	120	150	15 sq. ft.			To hold inks, clean up mattes, etc. at presses.
34' of Counter Type Work Area (30" deep)	500	1000	60 sq. ft.			Storage space underneath 17 x 22 Press — 10' 11 x 17 and 10 x 15 — 14'
2 - Two Drawer File Cabinets	80	120				Will be under counters. For use by pressmen for individual filing.
5 - Negative and Plate Filing Cabinets 27" x 19" x 18"	250	500	10 sq. ft.			For 11 x 17 and 10 x 15 Press materials. Units would be stacked in two groups.
4 - Negative and Plate Filing Cabinets 27" x 26" x 23"	240	400	14 sq. ft.			For 17 x 22 Press materials. Units would be stacked in two groups.
4 - Portable Stock Trucks and Drying Racks	400	600	12 sq. ft.			Would be used at presses and for delivery to Finishing Area.
1 - Stainless Steel Sink with drain board 24" x 45" x 7"	150	250	8 sq. ft.		Hot and Cold water	For use by all pressmen.
LETTERPRESS AREA			Total 87 sq. ft.	Total 208 sq. ft.		
1 - 12 x 18 Platen Letter Press with Automatic Feed	6000	12000	25 sq. ft.		110 V	
1 - Platen Press Cabinet 47" x 27"	150	400	10 sq. ft.			
1 - Chase Storage Rack 20 x 36	75	250	6 sq. ft.			
1 - Proof Press 14 x 23 Bed	1500	3000	18 sq. ft.		110 V	

TABLE IX Facilities Required — PRINTING Page 1 of 2

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
11' Counter Type Work Area (30" deep)	200	400	28 sq. ft.			Storage space under 6' for Letterpress 5' for Proof Press
1 - Two Drawer File Cabinet	40	60				Will be under counter. For use by pressmen for individual filing.
DIAZO AND XEROGRAPHY AREA			Total 76 sq. ft.	Total 92 sq. ft.		
1 - 42" Dry diazo machine with Roll Paper Attachment	4500	7000	21 sq. ft.		220 V with outside exhaust	
1 - Unit Closed Steel Shelves 18" x 36" x 84"	40	50	5 sq. ft.			
10' Counter Type Work Area (30" deep)	200	400	25 sq. ft.			Storage space under.
2 - Five Drawer Cabinets — Blueprint Style 41" x 29" x 16"	200	300				Will fit under counters for storage of diazo masters.
1 - Xerography Copy Machine	Lease		25 sq. ft.		110 V	
SILK SCREEN PRINTING AREA			Total 61 sq. ft.	Total 143 sq. ft.		
1 - Silk Screen Printing Machine 17 x 22 size	1000	3000	6 sq. ft.		110 V	
2 - Drying Cabinets	1500	3000	16 sq. ft.		110 V	
1 - Storage Rack	100	500	9 sq. ft.			Could be built in. For storing screens for reuse.
10' Counter Type Work Area (30" deep)	200	400	25 sq. ft.			Storage space under.
1 - Unit Closed Steel Shelves 18" x 36" x 84"	40	50	5 sq. ft.			For inks, etc.
Miscellaneous Equipment	400	800				Waste Receptacles, Small Table-top Paper cutters, etc.
TOTALS for Printing Area	31885	58630	333 sq. ft.	985 sq. ft.		
TOTAL SPACE REQUIRED			1368 sq. ft.			

TABLE IX Facilities Required — PRINTING Page 2 of 2

TITLE	JOB DESCRIPTION	QUALIFICATIONS	QUANTITY
OFFSET PRESSMAN	Operate all models of Offset Presses in the shop and be very familiar (able to perform) with all other phases of Offset Printing.	Graduate of Technical School and two years experience or five years experience.	Two full time.
LETTER PRESS OPERATOR	Operate all models of Letter Presses in the shop and be able to perform all other phases of Letterpress Printing.	Graduate of Technical School and two years experience or five years experience.	One full time.
PRINTER'S APPRENTICE (OFFSET)	Assist Offset Pressman in operating all Presses and in burning Plates.		Three-quarters time (See TABLE VIII)
PRINTER'S APPRENTICE (LETTER)	Assist Letterpress operator in setting up, running and finishing materials on presses.		One-half time. (See TABLE VIII)
PRINTER'S HELPER	Assist all Reproduction personnel in their duties. (Cut paper, load and unload paper from presses, clean presses, etc.)		One-quarter time. (See TABLE VIII)
SILK SCREEN OPERATOR	Operate and maintain all equipment used in Silk Screen Printing. Be able to perform all phases of the Silk Screen operation.	Graduate of Technical School or three years experience.	One full time.
DIAZO OPERATOR	Operate a diazo machine. Perform all tasks necessary in the reproduction from originals by diazo.	High School Graduate and one years experience.	One full time.

TABLE X Personnel Required — PRINTING

F. Finishing and Delivery

1. Function

(a) To transform the printed material received from the Printing Section into finished and deliverable form. Included as processes are: collating, jogging, folding, perforating, slitting, scoring, cornering, drilling, grommeting, laminating, binding (plastic, stitching and staple, tape) and padding.

(b) To package by wrapping, boxing and labeling for shipment to customer via local delivery or mail.

2. Facilities required -- for a detailing of equipment and cost, utilities, and space, see TABLE XI.

3. Personnel required -- for a detailed description, see TABLE XII.

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
FINISHING AND DELIVERY AREA			Total 390 sq. ft.	Total 1050 sq. ft.		
1 - Automatic Collator, to accept 11" x 17" sheet	$5000	7000	20 sq. ft.		110 V	
1 - Automatic Collator, to accept 8½" x 11" sheet	3000	5000	20 sq. ft.		110 V	With built-in or accessory staples and stacker.
1 - Bin Type Jogger, rack size 17" x 22"	500	700	4 sq. ft.		110 V	
1 - Folder, to accept 17" x 22" sheet	1000	1200	100 sq. ft.		110 V	With built-in or accessory perforating, slitting, and scoring.
1 - Wire Stitcher	500	1000	8 sq. ft.		110 V	Interchangeable plates for saddle and flat stitching.
1 - Automatic Stitcher	5000	10000	22 sq. ft.		110 V	With accessory gathering, saddle, and flat stitch attachments.
1 - Tape Binder	200	400				(Used on counter unit)
1 - Padding Press, with 22" board	30	50				(Used on counter unit)
1 - Punch for multi-ring binding, 16" wide	500	700			110 V	(Used on counter unit). With set of wide hole punches; set of T-slot punches.
1 - Binder Machine for multi-ring plastic binding, 16" wide	300	500			110 V	(Used on counter unit)
1 - Counter unit for tape binder, padding press, electric punch and electric binder.			42 sq. ft.			Space underneath and above counter units for cover stock, tape, plastic rings, etc.
1 - Three-Spindle Paper Drill	700	1000	6 sq. ft.		110 V	Assortment of drill sizes 1/8" to 1/2"; and slot makers.
1 - Corner Rounder, floor model	100	200	4 sq. ft.			Assortment of cutting units 1/8" to 1-1/2".
1 - Eyeleter	20	50				(Used on counter unit). With foot power attachment.

TABLE XI Facilities Required — FINISHING AND DELIVERY Page 1 of 2

EQUIPMENT	COST		SPACE		UTILITIES	REMARKS
	min.	max.	EQUIPMENT	WORK		
1 - Grommet Machine, for ¼" and ½" grommets	75	100				(Used on counter unit)
1 - Laminator, sheet width up to 17"	400	600			110 V	(Used on counter unit)
Counter unit for eyeleter, grommet machine, and laminator with storage underneath for associated supplies.			42 sq. ft.			
1 - Paper Cutter, to accept 1 ream of 17" x 22" paper	600	1500	16 sq. ft.		220 V	(With hydraulic paper clamp)
1 - Wrapping Paper Holder 30" wide	35	50				(Used on counter unit)
1 - Tape Machine	20	30				(Used on counter unit)
1 - Filiment Tape Dispenser	30	50				(Used on counter unit)
1 - Counter unit for wrapping and boxing finished products.			36 sq. ft.			
1 - Two Wheel Hand Truck	30	50	3 sq. ft.			
1 - Hydraulic Platform Truck	200	400	10 sq. ft.			
4 - Portable Stock Trucks 18" x 24"	400	800	12 sq. ft.			
1 - Labeling Machine	50	100				(Used on counter unit)
Shelving unit for finished products			45 sq. ft.			
TOTALS for Finishing and Delivery	18,690	31,480	390 sq. ft.	1050 sq. ft.		
TOTAL SPACE REQUIRED			1440 sq. ft.			

TABLE XI Facilities Required — FINISHING AND DELIVERY Page 2 of 2

TITLE	JOB DESCRIPTION	QUALIFICATIONS	QUANTITY
FINISHER	Capable of operating the following equipment and performing their associated functions: Collating Jogging Folding Perforating Slitting Scoring Corner-rounding Drilling Grommeting Laminating Binding Stapling Padding	High school graduate with on the job training.	Two full time.
DELIVERY MAN	Wrapping, boxing and labeling finished products.	High school graduate with on the job training.	One-half time. (This time available from one-half time person in Supply, TABLE IV)

TABLE XII Personnel Required — FINISHING AND DELIVERY

II. SUGGESTED DESIGN

A. Functional Relationships

In the process of producing publications, ideas are blended with ink and paper, in the hope of creating a product more valuable than the sum of its individual components. Raw materials, editorial and artistic talent, and the printer's craftsmanship are welded together by administrative skill to form an efficient and flexible unit. A prerequisite to successful operation of any production activity is a functional working space -- onewhich optimizes the unobstructed flow of materials and personnel.

Figure 1 is a conceptual diagram of the inter-relationships among the six units of the Publications Department. The solid lines represent major movements of people and materials -- the dashed lines represent definite but less important flows of people and materials. The number, direction and strength of arrows leading into or away from any one section give a good indication of the volume and frequency of activity entering and exiting a particular section. Supply, for instance, must be readily accessible to all sections, but administration and finishing need not even be in close proximity to one another since there is little or no direct contact between the two.

B. Modular Design

Figure 2 represents a modular layout of the Publications Department. Each section is allotted its corresponding proportion of space, and is placed in a position so as to maximize the flow patterns derived from Figure 1.

We recommend a general rectangular shape for the Publications space. Such a shape affords a greater perimeter (or wall surface) per area of floor space -- thereby providing more contact surface with adjacent sections. The exterior doorways in the administration and supply/finishing areas denote the "front or client" access and the "back or service" access.

It cannot be overemphasized that this design is intended more as a functional map than as an architect's specification. Its purpose is to portray relationships rather than dimensions.

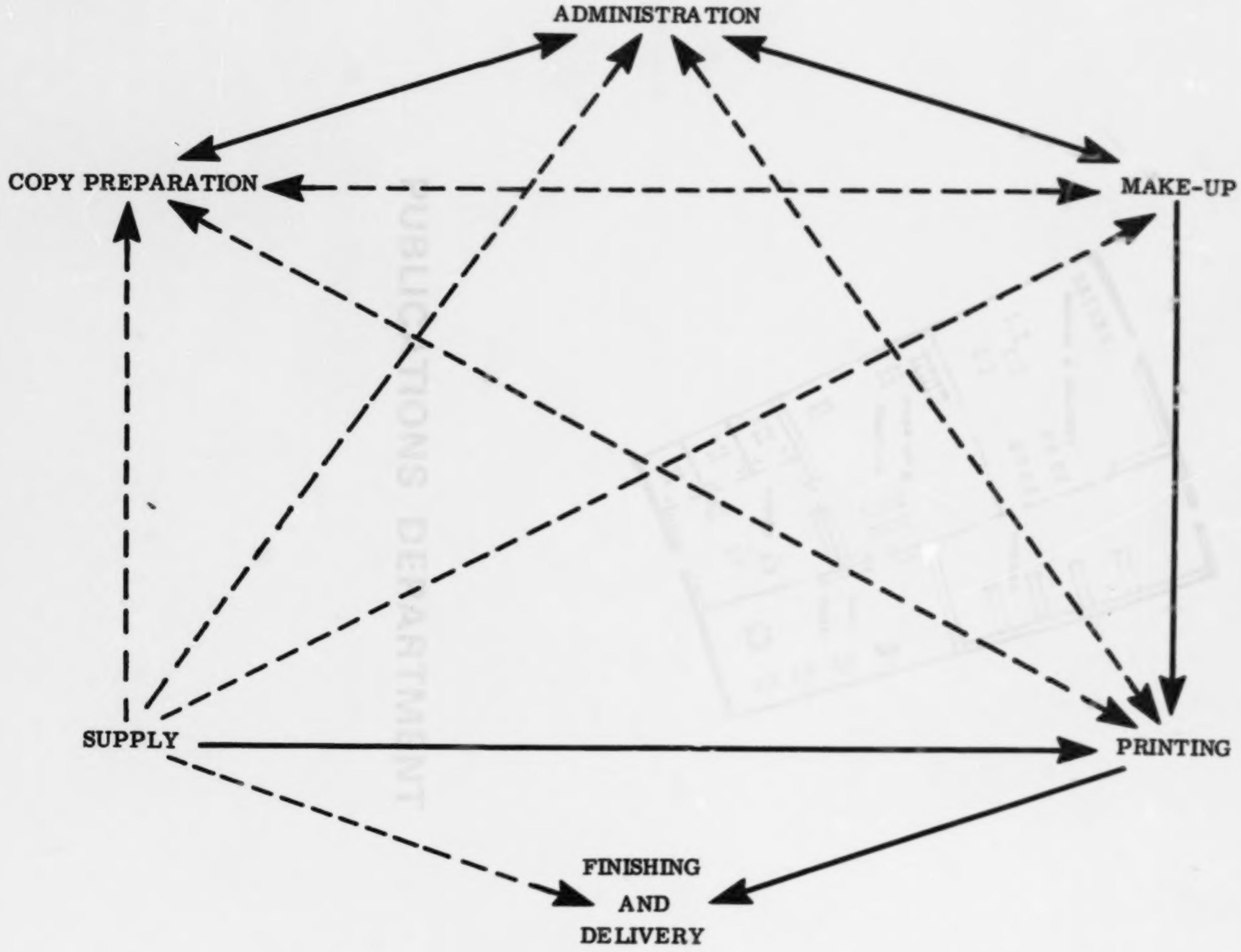
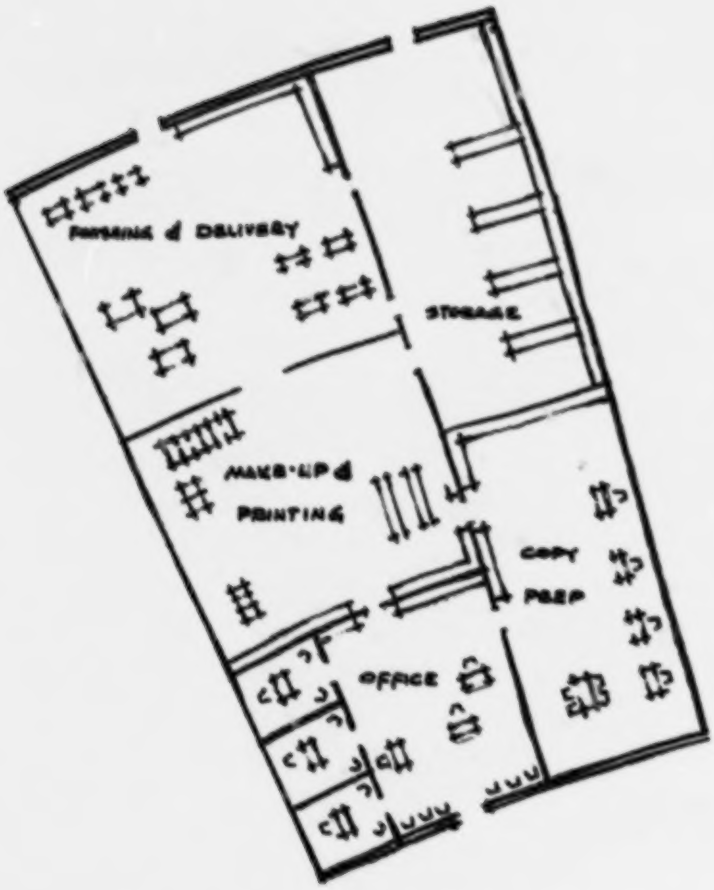
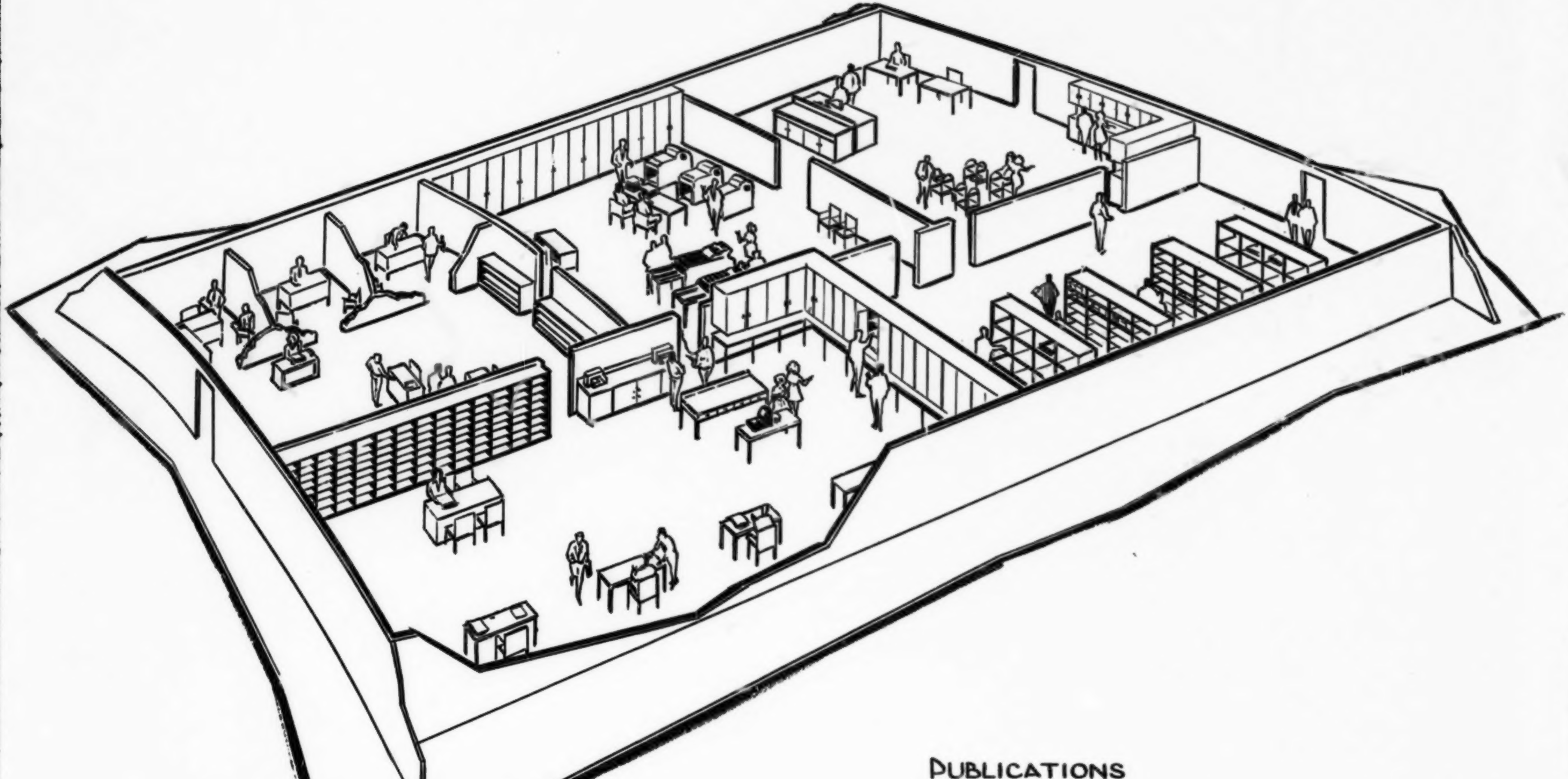

ADMINISTRATION
COPY PREPARATION
MAKE-UP
SUPPLY
PRINTING
FINISHING AND DELIVERY

Figure 1 Functional relationships among sections of the Publications Department.


FINISHING & DELIVERY
STORAGE
MAKE-UP & PRINTING
COPY PREP
OFFICE

PUBLICATIONS DEPARTMENT



PUBLICATIONS

DATA PROCESSING

I. DESCRIPTION OF EDUCATIONAL USAGE

The role of a Central Data Processing Center is:

A. To provide advisory and consulting services to schools and to provide school personnel with the opportunity to learn how, when and why to use data processing.

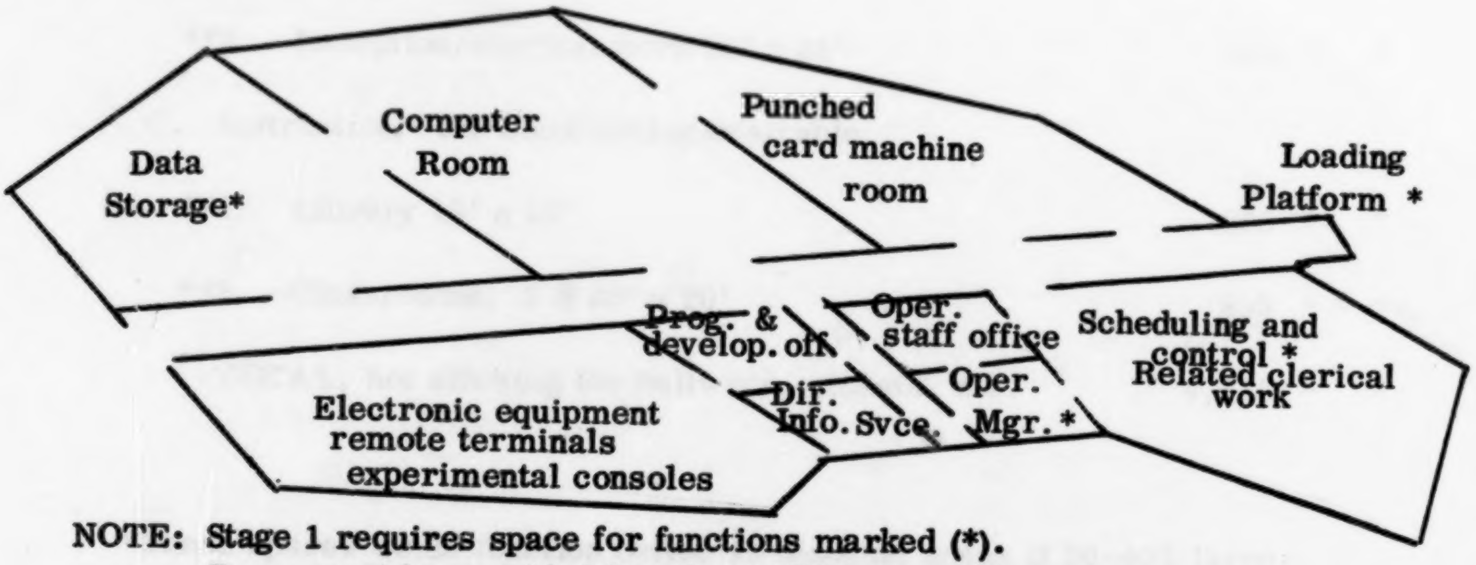
B. To provide machine facilities beyond the capability of local school districts. Machine facilities can be used by schools as their own, subject to scheduling problems.

C. To provide information processing services to schools at a level of sophistication above that which a local school district can hope to achieve by itself, and at a lower cost.

II. SPACE REQUIREMENTS

About 6,000 square feet total, for office space, clerical work space, punched card equipment, storage, computer room. More space for equipment above minimum required for continuing load (e.g., for training, heavy load). Less space if shared facilities not counted (library, etc.) However, greater use made of classroom space for instruction in information processing science.

Stage 2 Space Requirements


Data Storage*
Computer Room
Punched card machine room
Loading Platform *
Prog. & develop. off.
Oper. staff office
Scheduling and control *
Related clerical work
Dir. Info. Svce.
Oper. Mgr. *
Electronic equipment remote terminals experimental consoles

NOTE: Stage 1 requires space for functions marked (*).
Space must be provided for air conditioning equipment.
Some economy of space can be obtained by cutting down on space for data storage and electronic equipment. However, this will mean more clutter in operating spaces.
Some economy of machine spaces can be obtained if machinery is laid out for production use only, with no provision for teaching uses.

Stage 2 Suggested Space

A. Operating Spaces - air conditioned throughout, soundproofed	
*1. Computer room 25' x 30'	750 sq. ft.
*2. Punched card machine rooms	
(a) Key punch/verifier 10' x 15'	150 " "
(b) All other E.A.M. machines 20' x 25'	500 " "
#3. Scheduling/Control/Staging 20' x 35'	700 " "
#4. Storage (tapes, cards, forms) 15' x 20' (Soundproofing not necessary)	300 " "
5. Electronic Equipment 15' x 15'	225 " "
B. Office and Clerical Space - air conditioning recommended	
1. Offices: Director, Programmers, etc.	
(a) One @ 12' x 15'	180 " "
(b) Four @ 10' x 12'	480 " "
**2. Reception/clerical work 20' x 25'	500 " "
C. Instruction - air conditioning desirable	
**1. Library 15' x 15'	225 " "
**2. Classrooms: 2 @ 20' x 20'	800 " "
TOTAL, not allowing for hallways, closets, etc.	4,810 " "

*These spaces would function better as teaching areas if 20-40% larger.

#Size of these spaces may have to be larger as more work is done for more pupils. Alternatively, schools can store their own cards and forms, do some of their own staging.

**Spaces that may be shared with other functions of Center if these other functions do not make heavy use of them.

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

No individual cost figures are shown. At present salaries and computer rentals, it would be wise to plan at least $150,000 per year for a data center operation of any size providing significant services to schools with an enrollment of 100,000 pupils.

The following elaborates on requirements summarized in tables further on in this chapter.

A. Punched card machinery - minimum:

4- IBM 026 Keypunches	60. each
1- IBM 056 Verifier	50.
1- IBM 083 Sorter, with counter	135.
1- IBM 085 Collator	125.
1- IBM 407 Tabulator	675.
1- IBM 519 Reproducer, with 27 mark sense positions	195.
1- IBM 557 Interpreter, with repeat print and stacker select	195.

Some reduction of extra features may be possible when a computer is installed.

Assumption: computers are used for major production work such as scheduling and report cards. Additional punched card equipment (service bureau or industry) may be used for peak loads.

B. Optical scanner:

One should be installed as soon as economically feasible. Avoid a machine primarily for test scoring. When a scanner is installed, keypunch and mark sense capabilities may be reduced, or at least not expanded in proportion to workload.

C. Computer facilities: $8,500. per month rental

Stage 1- Equivalent of IBM 1401 and IBM 7090 available from a service bureau or industry for much of the production work.

Stage 2- Equivalent of IBM 1401 with tape and disk capability installed. IBM 7094 or equivalent available outside for major jobs such as scheduling.

All of the equipment listed in Section III may be available at discount, presently 20% to educational institutions.

Outside computer time: highly variable; possibly $1,500. per month.

D. Supplies:

Budget 10 to 25 IBM cards per pupil per year @ $1.25/1,000 cards.

Forms: highly variable; 40¢ per pupil per year estimate.

Magnetic tapes: 100 @ $43.00; one time expense; more tapes may be needed later.

Disk Packs: 5 @ $450.00; one time expense, can be rented @ $15.00 per month if so desired.

Wireboards: $750.00; one time expense

E. Auxiliary Equipment:

Classroom: Tables and chairs for students; blackboards, screens, projection equipment.

Library: Table, bookshelves

Clerical and Office Space: Usual desks, chairs, filing cabinets, typewriters, desk lamps, etc.

Operating Spaces:

Computer Room:
- Tape storage cabinets - 100 reels
- Card storage cabinets - 100,000 cards
- Work tables (3)
- Disk storage cabinet
- Operator desk/chair
- File cabinet for procedure documentation
- Cart for moving jobs
- Forms storage cabinet (small)
- Timeclock
- Wastebaskets (3)
- Utility trays

E. Operating Spaces (cont'd.):

Punched card rooms:

- Key punch desks (1 per machine)
- Sorter rack
- Card storage trays and cabinets - 400,000 cards
- Work tables
- Operator desk/chair
- File cabinet for procedure documentation
- Decollator - burster for printed forms
- Wireboard storage racks (for 10 407 boards, 30 519/557/085 boards)
- Wiring table with stand
- Wastebaskets
- Carriage control tape storage cabinet
- Cart for moving jobs

Scheduling/control/staging:

- Supervisor's desk/chair
- File cabinet: procedures, job records
- Blackboard
- Card editors' desks (2)
- Scheduling control board
- Card carrying cases (10)
- Tape reel carrying cases (5)
- Work tables
- Chairs for 3 or 4 clerk/operators
- Timeclock
- Card storage racks (200,000 cards)

Storage:

- Shelving for IBM card boxes (10,000 size)
- Shelving for form storage
- Transfer files for processed IBM cards

IV. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

Probable personnel requirements and qualifications:

A. Director of Information Services

Preferably with a doctorate in education and a strong background in the computer sciences. These people are rare and may have to be "home grown" during stage 1. Management capability as well as technical know-how required. Must be able to understand and implement what has already been developed; capacity for new development work desirable.

B. Programmer/Analyst

Good technical background, capable of devising procedures, writing programs, designing forms, etc., and training operating staff to use them. Responsible for maintaining programs and operating procedures used by the data center. As workload increases, this job function may be split in two: (1) systems analysis, and (2) computer programming.

C. Training Director

Responsible for working with school staffs to develop understanding of what data processing can do and how. Helps school people understand and use statistics.

D. Operations Manager

Responsible for work scheduling, control of work in progress, supervision of operating staff. Keeps records and cost-accounts work done. Maintains supplies. Sees that equipment is used and maintained properly.

E. Supervisor

Assists Operations Manager and oversees all work in progress. Must be competent to organize routine jobs, direct operators, and operate machinery.

F. Operators

Capable of using the available machinery efficiently. Number of operators will depend on workload, amount and kinds of machinery installed, and how much of the work is done by school staff personnel instead of center operators.

G. Clerical Help

Available as needed for hand processing operations.

H. Messenger/Courier

Delivers materials to and from schools, and to and from outside computer and punched card facilities. Should be able to plan routes and recognize that material called for has, in fact, been picked up and delivered.

V. POTENTIAL PROBLEMS

A. Scheduling of critical services such as school scheduling and report cards so that all schools are serviced in a reasonably short time period.

B. Helping school people understand and accept their role in making data processing work.

C. Devising procedures and forms that will satisfy all cooperating school districts and allow for differences among them, yet constitute a reasonably standard data center operation.

D. Developing a partnership with school administrators that will help them exercise control over their data and let them feel comfortable about doing things in totally different ways.

E. Getting enough resources behind the data center so that "critical mass" is reached quickly for each school. This means getting enough information in machine-readable form and accurate, and having enough machinery and procedures available, to provide real benefits to schools soon after participation starts.

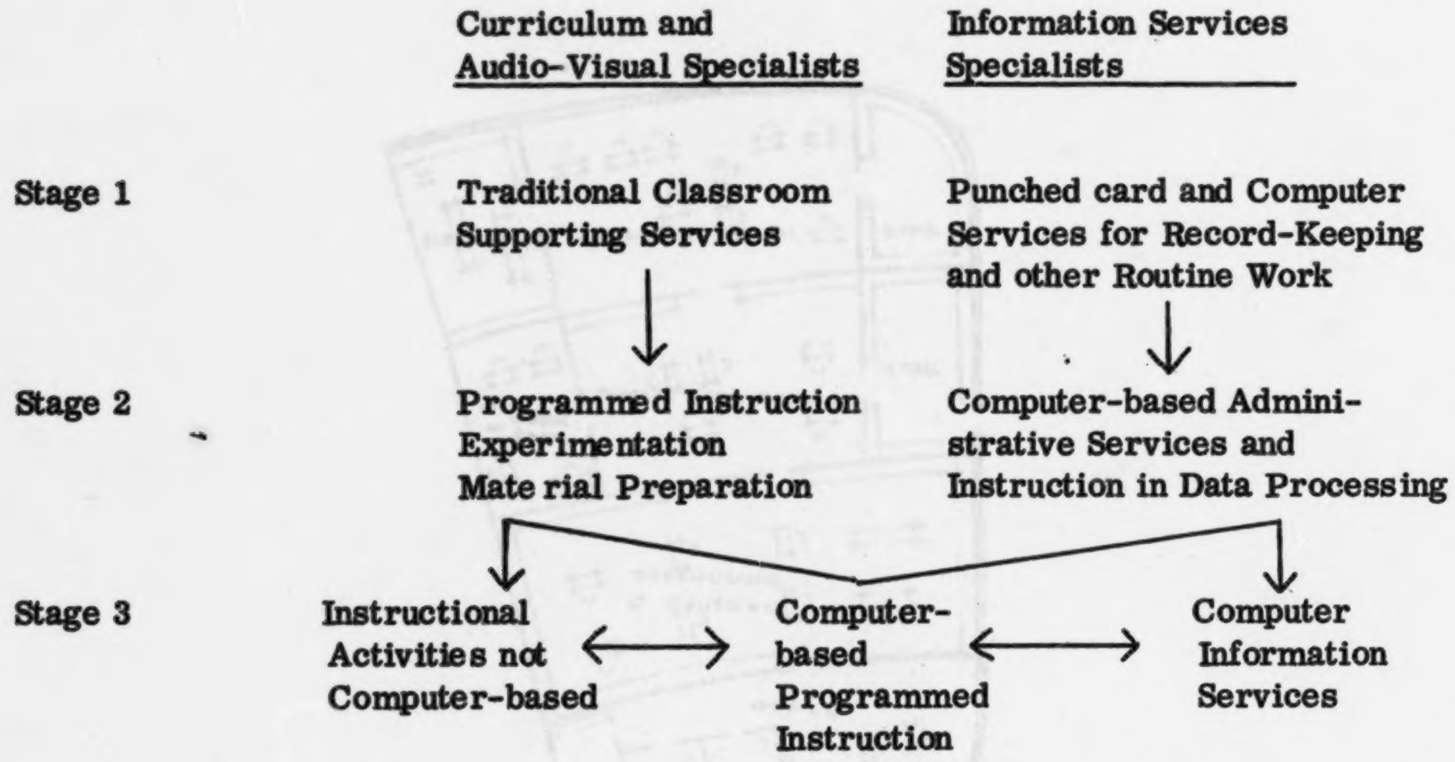
F. Keeping teachers comfortable about having students who may learn more than their teachers about data processing.

G. Stopping old procedures as soon as new procedures have proven satisfactory.

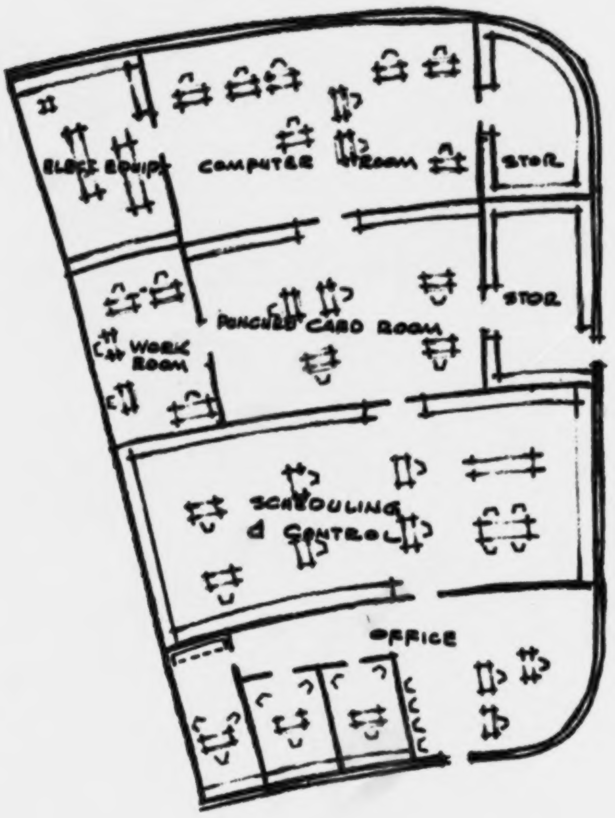
H. Helping school people understand and use the vastly increased amount of information available to them.

SUMMARY OF REQUIREMENTS

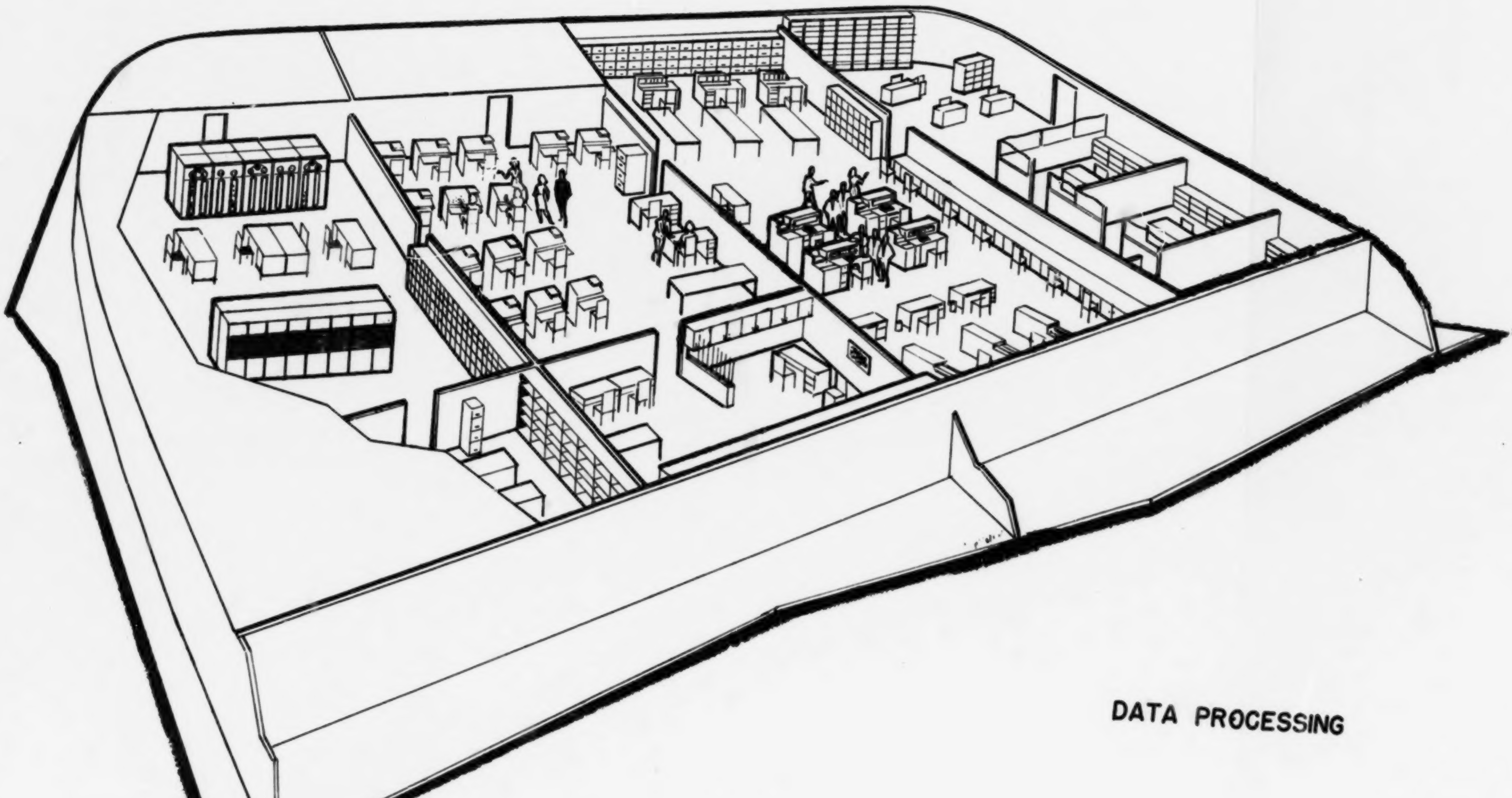
STAGE	PERSONNEL	EQUIPMENT	SPACE	Relation to other components of center
1	Director, Data Proc. Programmer/analyst Person responsible for scheduling, control and training Punched card oper. Clerical help Messenger/courier	Center: Punched card equipment to handle at least the minimum continuing load. Schools: Some equip. in larger schools for training & local jobs. Outside: (Service Bureau, Industry) All computer time; add'l punched card machine time.	About 4000 sq. ft. total for office, clerical work, punched card equip., storage. More space for equip. above min. req. for continuing load (training, heavy load); less space if shared facilities not counted (library, etc.).	Can share: Library, receptionist, classroom space for school staff instruction. Functionally separate since primarily administrative services not directly related to curriculum, instruction or audiovisual work.
2	Director of Information Services Systems analysts Programmers Training Director Operations Mgr. Supervisor Computer operators Punched card oper. Clerical help Messenger/courier (Research Staff)	Center: Small or med. size computer with random acess storage punched card equip. for pre & post comp. processing. Schools: Some punched card equip. for training & local jobs; experimental remote consoles for data transmission. Outside: Large computer time.	About 6000 sq. ft. total. Add to above: Computer room and more office space. Less space if shared facilities not counted However, greater use made of classroom space for instruction in information processing sciences.	See above. Some interaction with curriculum people for student programming and with other curr. people for experimental purposes. Research and quality control functions will be broader than just data processing.
3	Add to above: Curriculum programmers Programmed instruction specialists (May also do curriculum work independent of the computer.)	Center: Large gen'l purpose computer with extensive random storage and ability to control presentation of AV matter. Schools: Remote consoles for both pupil instruction and admin. data transmission; some machinery for training. Outside: Extra computer time as needed.	10,000 sq. ft. plus - for bigger computer plus instructional materials and related hardware under computer control.	Total curriculum and audiovisual staff involved in instructional phases and in evaluative data.


Curriculum and Audio-Visual Specialists
Information Services Specialists
Stage 1
Traditional Classroom Supporting Services
Punched card and Computer Services for Record-Keeping and other Routine Work
Stage 2
Programmed Instruction Experimentation Material Preparation
Computer-based Administrative Services and Instruction in Data Processing
Stage 3
Instructional Activities not Computer-based
Computer-based Programmed Instruction
Computer Information Services

At all stages, research specialists may use data and data processing services, and may assist curriculum/audio-visual specialists in program evaluation.


ELEC EQUIP
COMPUTER ROOM
STOR
PUNCHED CARD ROOM
WORK ROOM
STOR
SCHEDULING & CONTROL
OFFICE

DATA PROCESSING DEPARTMENT



DATA PROCESSING

INSTRUCTIONAL MATERIALS

I. DESCRIPTION OF EDUCATIONAL USAGE

The basic function of a regional instructional materials center will be to house -- and distribute -- materials for use in classrooms. In general these will be materials that do not exist in the specific districts, although there may be some duplication.

The instructional materials center will provide housing for a large film library, an extensive collection of 3D materials such as kits and models, and 2D materials such as slides, transparencies, prints, charts, diagrams and photographs.

Sufficient materials need to be available to enable teachers to do their work. Catalogs of available materials are needed to indicate what is available and teachers' guides to help in the utilization of the materials.

The center also provides an in-service training program. It is so structured that demonstrations can be given, items can be constructed and the utilization of the materials be discussed. This service and its nature will vary with the directions provided by the board and the administration.

In addition to these functions, the center also provides for booking, circulation, repair and maintenance and record keeping. These services are necessary and their efficiency relates directly to the use of the materials in the classrooms.

II. SPACE REQUIREMENTS

The following are approximate space requirements for the units listed on the organizational charts:

A. Administrative Head

About 600 square feet of space will be required to house the staff consisting of the administrative head, an administrative assistant, two secretaries, one typeist clerk and their usual office materials and equipment.

B. Elementary Section

About 300 square feet of space will be needed to house the administrator, an intermediate stenographer, equipment and materials.

C. Secondary Section

About 300 square feet of space will be needed to house the administrator, an intermediate stenographer, equipment and materials.

D. Administrative Unit

About 1,500 square feet will be needed to house the staff with its equipment and materials.

E. Distribution Unit

1. About 2,500 square feet will be needed for packaging, loading, unloading, checking in and dock space.

2. About 2,500 square feet for inspection and repair of materials and equipment will be needed.

F. Circulation Unit

About 1,200 square feet would be needed to house the staff with its equipment and materials.

G. Materials

1. Film Library - 5,000 square feet to house 3,000 titles and a total of 25,000 prints.

2. 3D materials - about 5,000 cubic feet for storage

3. 2D materials - about 3,000 cubic feet for storage

H. Equipment Space

About 320 cubic feet.

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

A. Administrative Section

General office equipment.

B. Audio-Visual Services Section

	General office equipment	
	Shelving, Wood or Metal, Adjustable, Prefabricated, such as Lundia or equal, 12"x48"x96" units, as needed	
	Shelving, Dead Storage, Lundia, Full Space or equal, as needed	
1-	Bench, Work Type, Wood	250.
	Equipment for repair, maintenance and testing of audio-visual equipment	1,500.
4-	Stools, adjustable	35.
8-	Inspection machines, Automatic, 16mm film, Paulmar or equal	2,700.
8-	Splicers, Hot, B&H or equal	235.
11-	Chairs, adjustable, stool type with back	75.
2-	Readers, film, 16-35mm	200.
2-	Counters, footage, 16mm	100.
	Tools, assorted	500.
2-	Cabinets, tool	75.
3-	Carts, bin type, with sides 3'x4'x2-1/2', with four 6" diameter ball bearing wheels	150.
150-	racks, film, small all steel 400 foot reels	200.
100-	racks, film, large all steel 800 foot reels	210.
100-	racks, film, large all steel 1200-2000 foot reels	250.
5-	Benches, work, all steel 72"x29"x29"	75.

B. (cont'd.)

1-	File, Magne-dex or equal	250.
15-	Trays, Magne-dex	70.
10-	Projector, 16mm	450.
10-	Slide Projectors, 35mm	150.
8-	Projectors, Overhead Transparency	250.
1-	Projector, Opaque	300.
15-	Screens, Tripod	40.
10-	Recorders, tape, portable	150.
2-	Recorders, tape, portable Ampex or equal	2,500.
5-	Recorders, tape, professional Ampex 354 or equal, in consoles, installed	12,500.
10-	Players, record and 4 speed	75.
5-	Microphones, professional	150.
5-	Projectors, filmstrip	135.
1-	Truck, fork lift	
5-	Trucks, hand, electric	

IV. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

A. Administrative Assistant

Participates in departmental administration by making investigations of the less difficult operating problems, assisting in making investigations of the more difficult operating problems, or carrying out administrative assignments for a limited segment of departmental operations.

B. Accounting Clerk

Performs routing accounting, clerical, and bookeeping duties in the maintenance of fiscal records and controls on departmental or specialized County government activities, and performs such other duties as may be required.

This class is distinguished from the other clerical classes by the primary concern with performing specialized duties requiring training and skill in the theory and practice of maintaining fiscal records and controls. An employee in this class is responsible for applying bookkeeping techniques and procedures, and for carrying out his work under general direction and guidance on accounting problems.

C. Clerk

Performs clerical duties requiring a working knowledge of subject matter and the clerical functions involved and the use of initiative and independent judgment within a recognized procedure.

D. Intermediate Clerk

Performs specialized clerical duties requiring a working knowledge of specialized subject matter and the specialized clerical functions involved and the use of initiative and independent judgment within procedural and policy limits.

E. Audio-Visual Preview Clerk

Performs specialized clerical duties in processing audio-visual materials submitted to the Board of Education for preview and evaluation.

F. Order Clerk

Receives and records telephone orders for foods or for audio-visual materials and supplies and provides information concerning availability of such items.

G. Typist-Clerk

Does skilled typing work and performs general clerical duties requiring a working knowledge of subject matter and the clerical functions involved and the use of initiative and independent judgment within a recognized procedure.

H. Intermediate Typist-Clerk

Does skilled typing work and performs specialized clerical work requiring a working knowledge of specialized subject matter and the specialized clerical functions involved and the use of initiative and judgment within procedural and policy limits.

I. Supervising Clerk.

Supervises, for a substantial portion of his time, general and specialized office clerical work.

J. Intermediate Supervising Clerk

Supervises a large number of employees performing general and specialized office clerical work or a smaller number performing more diversified and difficult duties.

K. Head Clerk

Supervises a very large number of employees performing general and specialized office clerical work or a smaller number performing more diversified and difficult duties.

L. Stenographer

Takes stenographic notes and transcribes them on a typewriter, and performs clerical duties requiring a working knowledge of subject matter and the clerical functions involved and the use of initiative and independent judgment within a recognized procedure.

M. Intermediate Stenographer

In addition to general stenographic and typwriting duties, performs specialized clerical work requiring a working knowledge of specialized subject matter and the specialized clerical functions involved and the use of initiative and judgment within procedural and policy limits, or takes and takes and transcribes dictation of a difficult, technical or scientific nature.

N. Stenographic Secretary

Performs secretarial and clerical duties for a superior whose executive, administrative, highly technical or professional duties necessitate assistance of a secretarial nature; exercises independent judgment in screening office

N. (cont'd.)

and telephone calls, preparing correspondence, transmitting orders and similar matters, and assumes responsibility for decisions made in performing such duties.

O. Intermediate Stenographic Secretary

Performs secretarial and clerical duties requiring an extensive knowledge of the functions of the officem with particular reference to the duties and responsibilities of his superior, involving unreviewed decisions in matters not covered by specific instruction, responsibility for directing the action of others within established policy limits, and adjustment of complaints of employees and the public.

P. Store Helper

Performs routine manual and clerical duties involved in the function of supply, and performs such other duties as may be required.

Q. Stock Man

Has immediate responsibility for receiving, storing and issuing supplies and equipment, and performs such other duties as may be required.

R. Audio-Visual Technician

Performs a variety of duties related to the operation and maintenance of audio-visual equipment, including demonstrating use, storing and servicing, advising on related technical problems, and making minor repairs and adaptations.

S. Intermediate Audio-Visual Technician

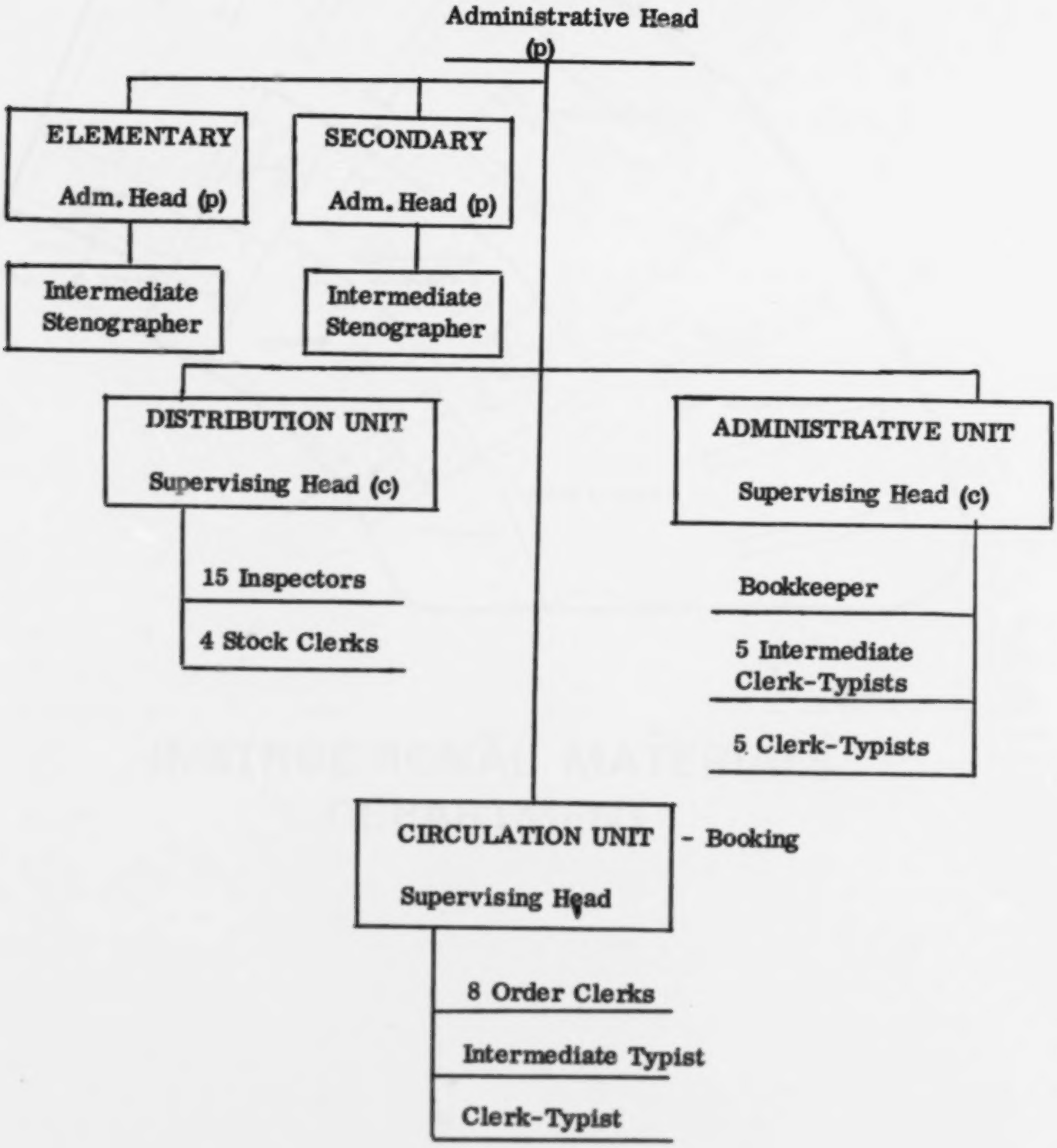
Manages a college audio-visual center, operates and maintains complex recording and television equipment, and advises certificated personnel on the use and adaptability of audio-visual equipment.

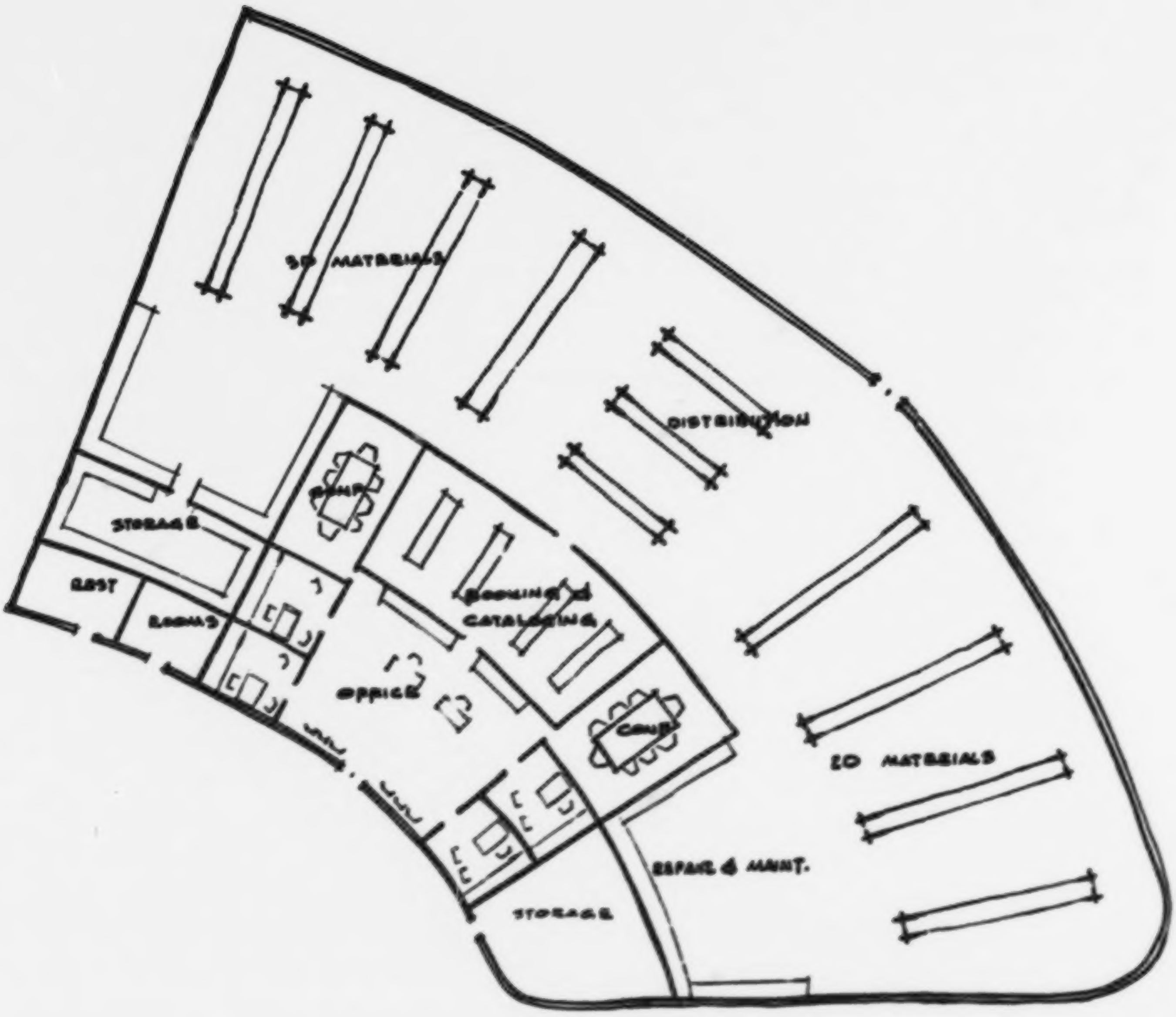
T. Senior Audio-Visual Technician

Supervises and performs the technical recording and editing of sound film and transcriptions, the procurement of sponsored audio-visual materials, and the recording of programs for radio broadcast; and supervises instruction in the use of audio-visual equipment.

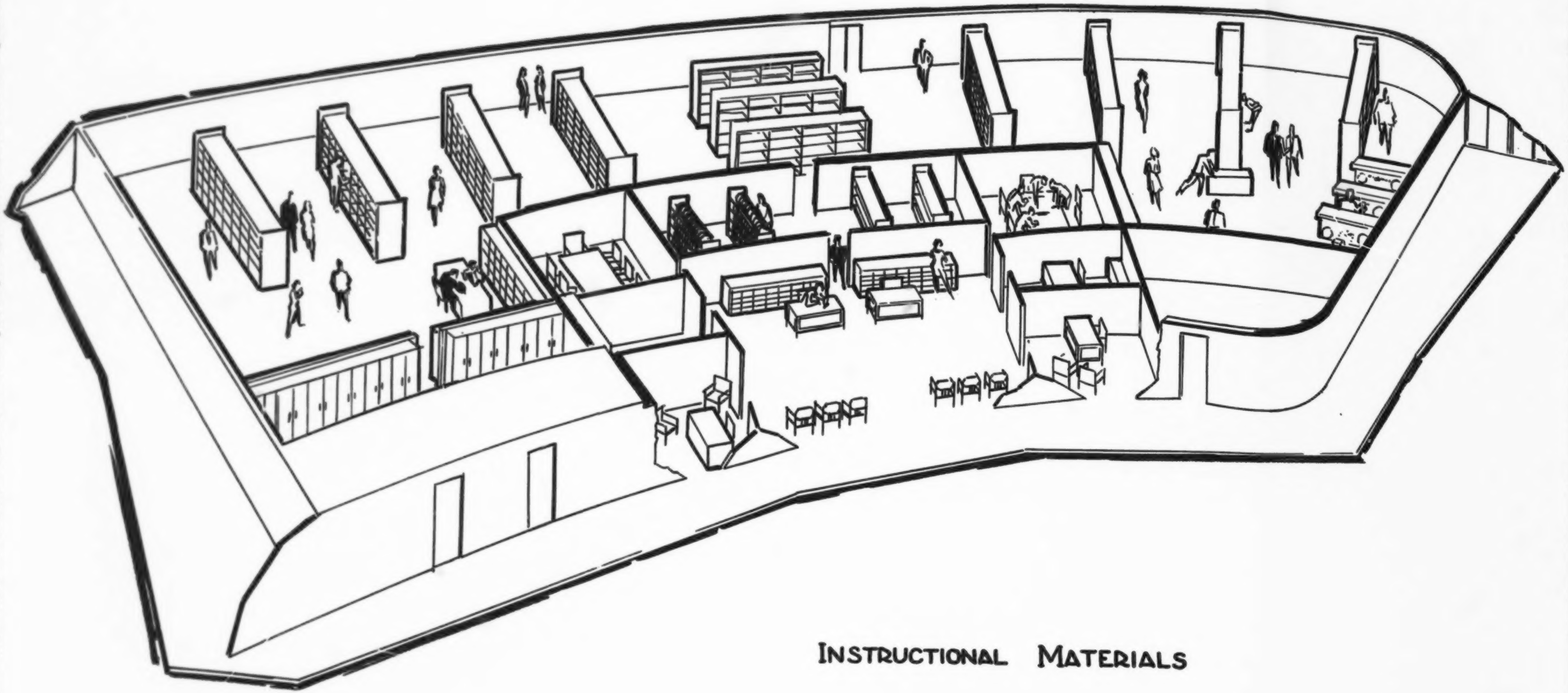
V. CHARTS AND SCHEMATICS

AUDIO-VISUAL SERVICES SECTION


Administrative Head
(p)
ELEMENTARY
Adm. Head (p)
Intermediate Stenographer
SECONDARY
Adm. Head (p)
Intermediate Stenographer
DISTRIBUTION UNIT
Supervising Head (c)
15 Inspectors
4 Stock Clerks
ADMINISTRATIVE UNIT
Supervising Head (c)
Bookkeeper
5 Intermediate Clerk-Typists
5 Clerk-Typists
CIRCULATION UNIT
Supervising Head
- Booking
8 Order Clerks
Intermediate Typist
Clerk-Typist


3D MATERIALS
DISTRIBUTION
CONF.
STORAGE
REST
ROOMS
BOOKING &
CATALOGING
OFFICE
CONF.
2D MATERIALS
REPAIR & MAINT.
STORAGE

INSTRUCTIONAL MATERIALS DEPARTMENT



INSTRUCTIONAL MATERIALS

SCIENCE CENTER

I. DESCRIPTION OF EDUCATIONAL USAGE

A regional Science Center is designed to serve the specialized needs of secondary schools throughout regions by supplying exhibits and equipment that could be more economically and conveniently purchased and stored on a cooperative basis.

The Science Center fits into the educational program of a school district as an instructional service which has not been met by any other office. It supports the work of the Science Supervisor as he strives to upgrade science instruction in the school. It supplies guidance to the teacher in the use of perishable material and equipment by written notices as well as in-service training classes. It develops new and unusual types of teaching materials and demonstrates their application in the science classroom.

Perishable materials for laborator activities were formerly purchased by individual teachers who were reimbursed by funds allotted for this purpose at the individual schools. This method did not prove satisfactory. New curriculum trends in radiation biology, physics, electronics, and modern concepts in chemistry and biology, emphasized the demands for upgrading the quality, the facilities, and the extent of science instruction.

The major function of the Science Center can be summarized as follows:

A. The need to obtain more readily and to distribute more effectively many perishable laboratory materials which have become increasingly more difficult for individual science teachers to obtain in a large urban school system.

B. The need to make available to science teachers on loan certain comparatively expensive and/or specialized items of equipment which cannot be afforded by an individual school's equipment budget.

C. The need to provide facilities for the construction of new equipment not commercially available.

D. The need for a facility for demonstrations, workshops, displays.

Objectives

A. To make perishable materials more readily available for classroom use and thus increase the effectiveness of the laboratory activities.

B. To improve skills in the use of laboratory equipment by providing equipment not generally available to individual schools because of its specialized nature, newness, or cost.

C. To provide facilities for teachers to use creative imagination in development and construction of science teaching equipment not commercially available.

D. To provide a means for keeping science teachers up-dated on the use of new equipment and teaching aids.

E. To provide the use of the Science Center's facilities and services by selected science students.

F. To furnish a display center in order that the community may share in the accomplishments and future developments of science education.

G. To provide facilities for teachers to experience new and refreshing teaching techniques, displays, demonstrations, and experiments and thus improve the science program in the schools.

Service to Schools

The Center supplies each of the junior, senior and special high schools with order forms for perishable materials. Each school submits an order for such materials once every two weeks. The Science Department Chairmen are prepared to give these deliveries immediate attention so that the perishable items will remain in good condition for classroom use.

The perishable items include: cultures of microscopic life; live animals, such as planaria, frogs, tadpoles, aquarium supplies, hamsters; fresh frozen animal tissues, prepared blood slides; dry ice; and standardized solutions containing radioactive isotopes.

Loan items of equipment are delivered to those schools requesting them by the Science Center truck as it makes its regular bi-weekly deliveries. Such items as kymographs, oscilloscopes, pH meters, volt meters, and radiation scalers are available on a loan basis.

The facilities of the Science Center are utilized for orientating meetings of science teachers and for various committees, such as the Biology Equipment Study Group; the Chemistry Equipment Study Group; the General Science Advisory Committee; the Modern Science Equipment Study Group; and the Physics Equipment Study Group.

II. SPACE REQUIREMENTS

The physical facilities outlined herein are adequate for a Science Center serving the needs of secondary schools. Provision is made for the following activities:

A. Growing, processing, packaging, and shipment of perishable materials.

B. Offices with a small resource library arranged so that up to five small groups such as committees, science department chairmen, and in-service training groups may meet simultaneously without disturbing each other.

C. A large conference room for groups up to sixty people to meet.

D. Storerooms for equipment and materials, large enough for the addition of equipment anticipated in the future.

E. Shop room equipped for wood and metal working large enough for in-service training projects planned for the construction of teaching aids.

F. General purpose laboratory for both physical and biological science laboratory activities.

The total space allocated for these activities is 7,347 square feet arranged in the following way:

	Area Sq. Ft.
Offices:	
Main Office	
Specialist's Office	
Teachers' Resource Library	1,216
Maximum Security Storage	144
Loan Equipment Storage	840
Perishable Material Preparation	480
Animal, Aquarium, & Culture Room	972
Demonstration Laborator & Reference Room	1,260
Shop Room: Wood Shop, Metal Shop, Glass Blowing Shop	2,375

III. EQUIPMENT REQUIREMENTS

		Total Cost
1-	Table, Science Teacher's Demonstration: Fiberglass top and sink, 30"x120", height 36", with drawers, cupboard, two duplex 110 volt AC outlets	780.00
2-	Glass Blowing Blast Burners	185.00
3-	Safety Glasses to go with Glass Blower	26.40
1-	Incubator	450.00
	Electronic Components for Building Demonstration Equipment	500.00
1-	Aquarium Pump (includes Pressure Tank and Gauge)	26.90
12-	Aquarium Heaters	34.80
12-	Aquarium Thermometers	4.80
16-	Aquarium Filters	33.60
4-	Aquaria 8 Gallon	23.20
4-	Aquaria 15 Gallon	39.20
24-	Aquaria 3 Gallon	52.08
24-	Animal Cages	325.20
1-	Microscope	167.65
1-	Microscope Sterioscopic	435.25
3-	Room Cooler Fan Type Electric (for animal room)	108.00
1-	Refrigerator (for perishables)	207.30
2-	Freezers (for perishable materials)	1,190.00
5-	Plant Press	34.75

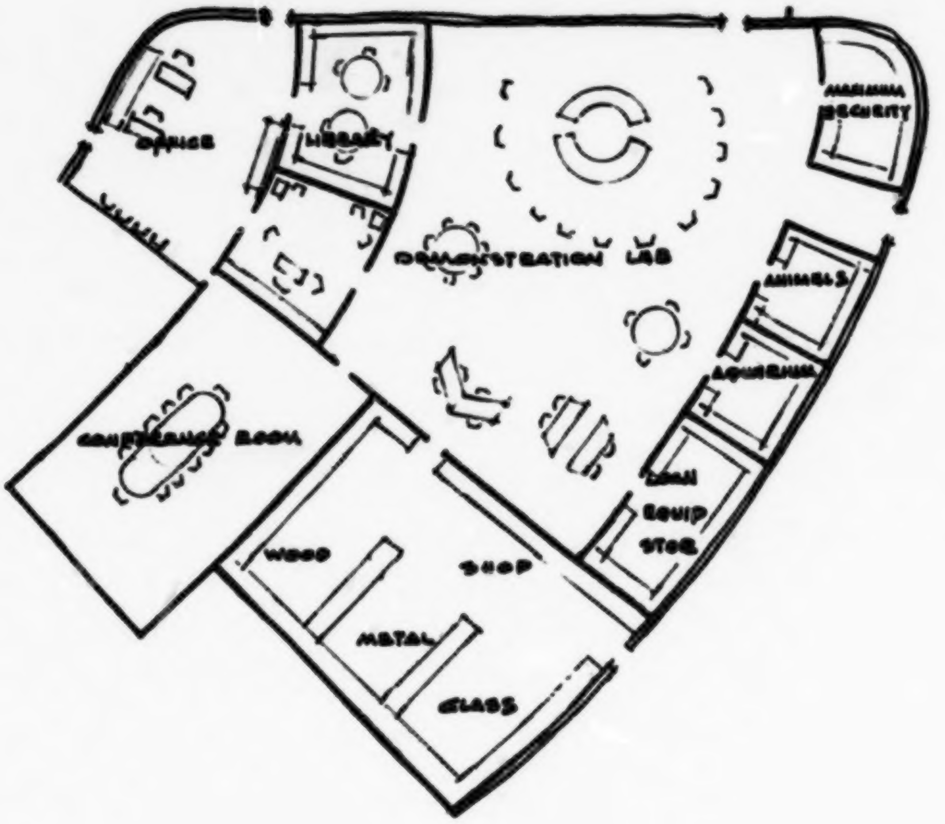
1-	Panel Truck (with refrigerated compartment)	2,600.00
2-	Fiberglass Tanks, 3' x 4'	600.00
2-	Microtome	104.00
2-	Centrifuge	110.00
2-	Stroboscope	300.00
2-	Motor Drive Variable Speed (for Stroboscope)	210.00
2-	Stroboscope Disc	30.00
4-	Stroboton Neon Tubes	50.00
5-	Kymograph Electric	230.00
2-	Kymograph Tambour	30.00
6-	Vacuum Tube Voltmeters	405.00
3-	pH Meters	585.00
3-	Land Cameras (Physical Science Study Committee)	381.00
2-	Defraction Grating Instruments	35.00
6-	Dewar Flasks	105.00
1-	Spectometer	562.00
1-	Bunsen Spectroscope (an attachment with wave length scale)	83.00
1-	Prism Clamp	7.50
1-	6-1/2 x 8 cm, Single Metal Plate Holder	11.50
1-	Grating Clamp	8.50
1-	Prism Table Cover	18.00
1-	Two-Aperture Diaphram	6.50

1-	Comparison Prism	17.00
1-	Prism 60° High Index, 18mm x 36m - n_d 1.72	30.00
4-	G-M Decade Scaler Kit with Accessories	3,900.00
1-	Acetylene Welding Outfit and Accessories	227.05
1-	Small Metal Lath	400.00
1-	Jig Saw	200.00
4-	Woodworking Benches (Workshop)	1,500.00
20-	Chairs	120.00
10-	Tables, pupil 24"x52", @ $22.65	226.50
1-	Vise 5"	56.00
1-	Vise 4"	46.00
1-	Metal Brake (small)	300.00
2-	Hand Drills (portable) 5/8"	225.00
6-	Sets of Hand Tools (hammer, screwdriver, wood chisel, awl, hand saw, pliers, wood file, brace and bits, etc.)	500.00
2-	Multi-purpose Units - Lath, Drill Press, Saw, etc. (such as Shopsmith Unit @ $350.00)	700.00

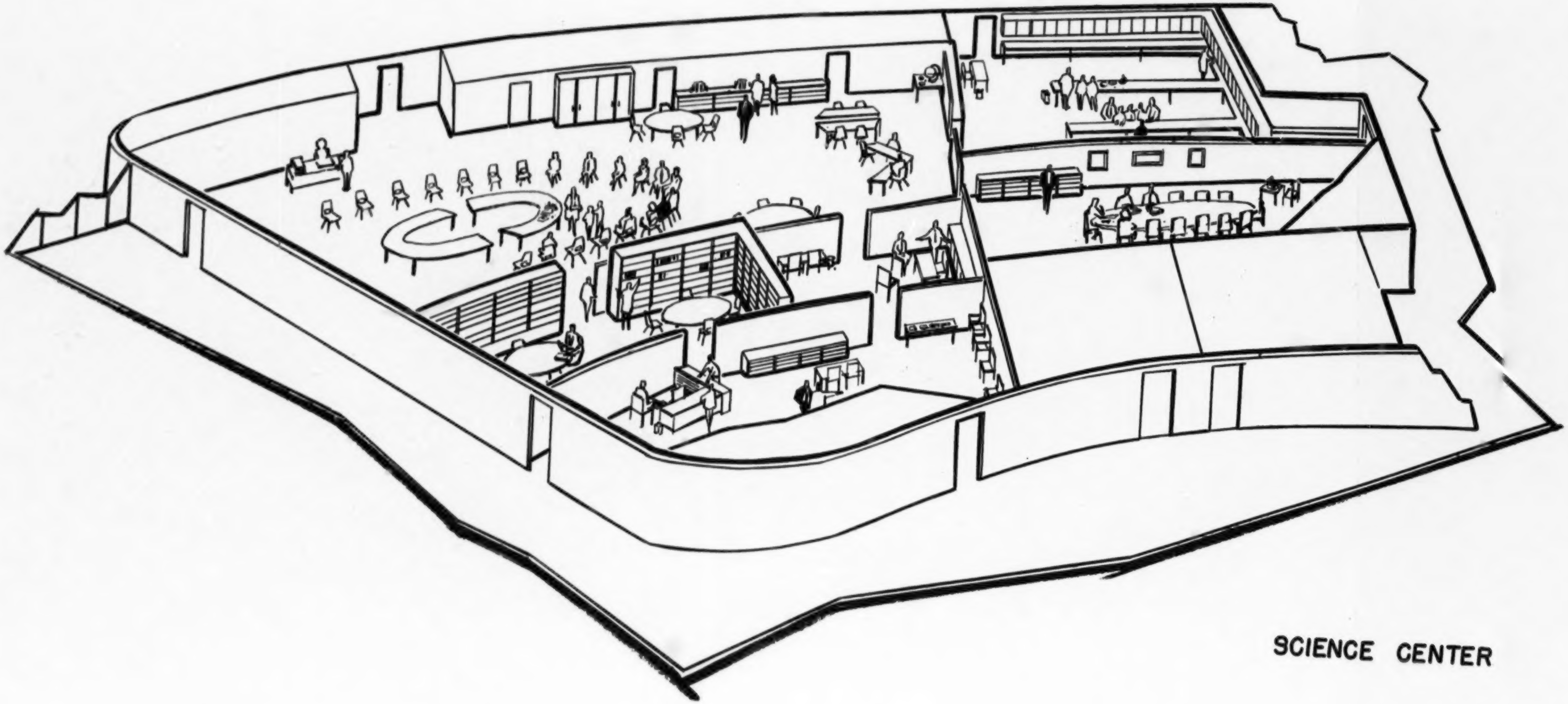
IV. ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS

The Science Center is one of the functions of the Instructional Materials Service. The personnel of the Center work closely with the curriculum and operating science supervisors. These supervisors are responsible for developing and promoting the use of the Science Center and Laboratory Workshop in order to see that the services of the Center are coordinated with the basic science curriculum at all levels.

The four full time employees required to staff the Science Center are the Science Center Specialist, Life Science Technician, Clerk-Stenographer, and the Light Truck Driver. College students with some background in biological science are also hired on a part-time basis of 12 hours per weeks to help with the packaging of perishable materials.


MAXIMUM SECURITY
OFFICE
LIBRARY
DEMONSTRATION LAB
ANIMALS
AQUARIUM
CONFERENCE ROOM
LOAN EQUIP STOR
WOOD
SHOP
METAL
GLASS

SCIENCE DEPARTMENT



SCIENCE CENTER

EQUIPMENT EVALUATION AND MAINTENANCE

I. DESCRIPTION OF EDUCATIONAL USAGE

The Equipment Evaluation and Maintenance Area will be staffed, equipped and will have the physical facilities to serve the school districts in the following ways:

A. The repair of all standard audio-visual equipment such as motion picture projectors, slide projectors, filmstrip projectors, record players, amplifier, turntables, tape recorders, language laboratories, and other related kinds of equipment.

B. The provision of a preventative maintenance program and schedule for the above kinds of equipment for the school districts.

C. A continuing program of evaluation, appraisal and recommendation concerning the most suitable and "best buys" for school use of the above kinds of standard audio-visual equipment.

D. The fabrication of special relatively minor modifications for audio-visual installations in the school systems, including such things as control units for language laboratories, cueing units for public address turntables, signal units, and any other minor modification.

E. A technical consultation service for the planning and development of advanced applications of technology to the instructional process.

F. The preparation of detailed specifications and schematic drawings for the use of school districts in soliciting bids for the development and installation of advanced systems as well as for the more standard and more common facilities such as intercommunication systems, public address and recording units.

G. To serve as the official checking and approval agency for all of the school districts for all purchases and contracts for audio-visual equipment and installations.

H. To offer instruction and direction to all school systems in the operation of complicated and unusual equipment and installations.

II. SPACE REQUIREMENTS

The space requirement for this unit is divided into three areas: the Office Area; the Receiving and Parts Storage; and the General Repair Area.

A. The Office Area

This would require a minimum square footage allotment of approximately 300 square feet. This area would provide space for the desks of the director and the clerk-typist; a small drawing table; two three-drawer filing cabinets; a bookshelf; one tub file; three guest chairs; and a coat rack. This room should have access to both of the other areas and should be connected by an intercommunication unit to each of the other areas.

B. Receiving and Parts Storage Area

This area would be used for receiving all repair jobs, holding jobs awaiting repairs and return shipment; the unit's repair parts inventory; and the desk of the foreman. This area should be adjacent to the general repair shop, should have access to the director's office, and should be convenient to an outside exit of the building to permit easy movement of large equipment items to and from the building. This area would require a minimum space allotment of 600 square feet.

Located within this area would be the following:

1- Desk and chair for Foreman
2- Guest chairs
1- Tube storage rack: 6" deep, 12' long, 6' high, with shelves spaced every 6"
6- Parts storage racks and drawers: each 12' long, 6' high, 18' deep with shelves arranged for convenient storage of parts inventory.
1- Open storage rack for Incoming and Outgoing Jobs: 18' long, 6' high, 2' deep.
2- 3-drawer Legal Size file cabinets

This area would be connected by an intercommunication unit with each of the eight repair carrels and to the director's office.

C. Repair Area

This large area would include: eight individual repair carrels, a television repair station; a tube testing station; a long bench work station; a drill press work station; an engine lathe work station; a grinding wheel, buffer, and

C. (cont'd.)

polishing station; and a Testing Console work station. This part of the unit would require a minimum allotment of 1,200 square feet of space. The breakdown of space for each part of this operation is given as follows:

1. The Eight Individual Repair Carrels

Each technician would be assigned to his own repair carrel. Each of the carrels would require 36 square feet of space. Each carrel would need a counter work space measuring 3' x 6'. Each carrel would be enclosed by walls 4' above the work counter on all sides of the carrel to provide isolation from adjacent carrels. The carrel side of these walls would be lined with pegboard to permit the use of pegboard holders for hand tools. No door, just a regular door-size opening should be provided. Each carrel to be provided with multiple 110 volt outlets in strip form on edge of work counter. Each carrel to have connectors to signals from test console, terminals to TV antenna system, outlet for monitor speaker, compressed air supply, an intercommunication station. Each carrel to have a stenographic-type chair and an adjustable arm clamp mounted on the counter. The tools, equipment, and supplies to be furnished to each carrell will be given in a later section of this specification.

2. Television Repair Station

A 36 square foot space is the minimum for this area. A work counter measuring 3' x 6' should be provided. A wall 4' above the work surface should be provided at the back and sides of the work counter. This wall to be lined with pegboard. Adequate overhead lighting to be provided together with the other input requirements listed for the individual repair carrels. On the pegboard should be mounted with suitable holders all of the alignment hand tools required for television set repair. A large adjustable mirror needs to be provided. A good quality soldering gun should be part of station equipment. An adjustable stenographic chair should be provided.

3. Tube Testing Station

An area of 24 square feet should be provided for this work. A counter approximately 2' deep and 6' long at a height satisfactory for seated work on two tube testers will be required. Two stenographic chairs should be provided, together with 110 volt outlets and adequate overhead lighting.

C. 4. Long Bench Work Station

A stand-up work bench, measuring 3' deep and approximately 20' long, should be provided. This will require approximately 100 square feet of space. All of the input facilities provided for the carrels should be provided for this station. Pegboard to be installed at the back of the work surface, 4' high, running the entire length of the bench. Good overhead lighting is necessary. Closed cupboards should be made from the space beneath the work bench for the storage of pieces of metal, flocking, wood, and other such items. A large, heavy-duty vise to be mounted on each end of the bench.

In addition, a gas supply should be provided at this area.

5. Drill Press Work Station

A drill press should be mounted on a pedestal base in an open area to permit the movement of long pieces of material. This work area would require approximately 12 square feet of space. A 2' x 2' piece of pegboard should be fastened to the frame of the drill press for holding drill bits, reamers, and accessories required in the operation of the tool.

6. Grinding Wheel Station

Two grinding wheel units with wire wheels should be mounted at stand-up work height on a suitable counter. These units should be mounted to enable work upon long pieces. Small pegboards should be adjacent to each wheel for storing safety glasses and other items required at the work station. Approximately 18 square feet are required for this station.

7. Engine Lathe Work Station

An area of approximately 18 square feet should be provided for the installation and operation of a small metal working lathe. A small piece of pegboard should be mounted on the frame of the lathe for storage of small items required for the operation of the lathe.

C. 8. Test Console Work Station

An area of approximately 15 square feet should be provided for the installation and operation of the test console unit. The test console would contain high quality amplification equipment, AM-FM tuner, record turntable, tape deck, together with patching connectors to permit the testing of all types of cables, microphones, input and output quality of units undergoing repair, the reading of various test values, and a host of other time-saving test routines. In addition, this console would distribute high quality signals to the various work stations. Space must be provided to enable the movement of equipment to the console for testing purposes.

9. Other Space Requirements in Repair Area

Space must also be planned in this area for the following:

3 three-drawer legal size file cabinets
Bookcase for holding service manuals and references
Storage cabinet with drawers for storage of small expendable parts, measuring 6' high, 3' wide, and 12" deep
Sink with hot and cold water supply
Coat rack
Small paint and flocking spray booth, 3' x 3' x 3', ventilated to the outside
Storage rack for open bins, measuring 6' high, 3' wide, and 18" deep
Small storage units with drawers mounted on shelves along length of work bench and at other areas for holding small expendable parts
Storage unit, 7' high, 8' wide, 18" deep, with shelves spaced 15" apart, for storing test devices and instruments
70" x 70" wall-mounted projection screen
3' x 6' table or counter for placing repaired pieces of equipment to permit them to run for three or four hours and thus check them under heat conditions.

III. EQUIPMENT REQUIREMENTS AND APPROXIMATE COSTS

A very careful inventory should be made of all of the equipment owned by the school districts. From this inventory a specific parts inventory should be developed with close attention given to adequate minimum inventory and procedural controls to safeguard against inventory depletion with resultant interference with the repair program. A parts inventory stocking and withdrawal system should be established, supervised by the foreman with the assistance of the clerk-typist. Stock withdrawals

III. (cont.)

should be correlated with the job work orders to permit accountability. Small expendable parts supplies should be kept in the work areas, but the use of such parts should also be recorded on the work order by the repair technician.

Every effort should be made to provide good basic test equipment and hand tools. Each repair carrel should have its own complement of hand tools and certain supplies. Certain other tools and equipment would be for the general use of all technicians in the repair unit. The suggested complements for the general repair unit and the individual repair carrels follows.

General Use Equipment: Beyond the facilities which have been specified earlier, the following equipment should be provided for the general use of all technicians:

2-	Capacitor Checkers	$ 60. each
1-	Stroboscope	450.
1-	Stylus Checker	125.
1-	Battery Checker	20.
1-	Signal Tracer	25.
1-	Isolation Transformer	40.
1-	Complete Range RF Signal Generator	600.
1-	Tapewriter	50.
1-	Condenser Checker	70.
1-	Heavy Duty Vacuum Cleaner	110.
1-	Audio Signal Generator	200.
1-	Milivoltmeter	80.
2-	Oscilliscopes	700. each
1-	Battery Eliminator	90.
1-	Transistor Checker	100.
1-	*TV Picture Tube Checker*	70.
1-	Welding Torch Set	40.
1-	TV Analyzer	350.
1-	Regulated Power Supply	200.
1-	Harmonic Distortion Meter	200.
1-	Audio Analyzer	400.
1-	Battery Charger	50.
1-	Audio Watt Meter	50.
1-	Capacitor Substitution Box	20.
1-	Resistance Substitution Box	20.
1-	Magnetizer	40.
1-	AC Ampmeter	25.
1-	Tension Scale Unit	5.

III. (cont'd.)

1-	Variable Line Transformer	$ 20.
1-	Small TV Test Picture Tube	15.
4-	Tool boxes, complete with hand tools for outside calls	100. each
1-	Complete set of Sams Photofacts and other required service manuals	800.

In addition, it is recommended that the following hand tools and supplies be provided for general use:

1-	Complete set, Phillips Screwdrivers	10.
1-	" ", Allen Wrenches	5.
1-	" ", Straight Screwdrivers	5.
1-	" ", Pliers	15.
1-	" ", Jeweler's Screwdrivers	5.
1-	" ", Large Allen Wrenches	8.
1-	" ", Special Screwdrivers	10.
1-	" ", Chassis Punches	40.
1-	" ", Files - large and small	20.
1-	" ", Standard Wrenches	20.
1-	" ", Nut Drivers	15.
1-	" ", Special Wrenches	20.
1-	Hack Saw	2.
2-	Wire Strippers	1. each
1-	Metal snips	5.
1-	Set of Awls	5.
1-	Set of Drill Bits	50.
1-	Hand Drill	5.
1-	Punch Set	5.
1-	Set of Peen Hammers	10.
1-	Set of Reamers	20.
1-	Set of Knives	5.
1-	Complement of Small Brushes	2.
1-	Carpenter's Square	8.
2-	Staple Guns	4. each
1-	Small Die and Tap Set	50.
1-	Wire Brush	1.
1-	Set of Holders and Clamps	10.
2-	Pair of Protective Goggles	2. each
2-	Small Funnels	1. each

III. (cont'd.)

All of the above tools should be given designated storage spaces on the pegboard at the rear of the large work bench. The handles of these tools should be painted with a different color to differentiate them from those assigned to each individual work carrel.

In addition, there should be easy availability for the following kinds of supplies: resistors, potentiometers, condensors, relays, coils, ball bearings, connectors, insulators, tube sockets, fuses, base pins, screws, grommets, springs, nuts, washers, fasteners, solvents, degreasers, and touch-up paints, etc.

Individual Repair Carrels: Each carrel is to have a complement of hand tools and a few basic supplies. The hand tools and supplies would have designated storage spaces on the pegboard. The handles of the hand tools would be colored differently for each carrel and differently from the general use tools.

In addition to the services and facilities outlined earlier, each carrell should have:

1-	Volt Ohmeter	$ 50.
1-	Monitor Speaker	3.
1-	Light Soldering Iron	3.
1-	Heavy Soldering Iron	5.
1-	Good Set of Earphones	25.
1-	Set of Thickness Gauges	8.
1-	Long Nose Plier	3.
1-	Knife	.50
1-	Regular Pliers	1.
1-	Forming Pliers	1.50
1-	Wire Stripper	1.
1-	Large Wire Cutters	2.
1-	Small Wire Cutters	2.
1-	Tube Puller	1.
1-	Knob Puller	.50
1-	Seizers	5.
1-	Adjustable Wrench	3.
1-	Set of Straight Screwdrivers	5.
1-	Set of Small Allen Wrenches	5.
1-	Set of Phillips Screwdrivers	5.
1-	Set of Nut Drivers	10.
1-	Flashlight	3.
1-	Dental Mirror	2.

III. (cont'd.)

1-	Neon Line Tester	$ 2.
1-	Set of Short Patch Coards with most common connectors	10.
1-	Set of Small Cleaning Brushes	2.
1-	Bench Cleaning Brush	3.
1-	China Marking Pencil	.35
1-	Strobe Disc	.50
1-	Magnetic Test Tape	2.10
1-	Small Reel Motion Picture Test Film	10.
2-	Test Records	5. each
1-	400' 16mm Take-Up Reel	.45
1-	7" Magnetic Tape Take-Up Reel	.45
1-	Cycle Rejection Filter	10.

A small stock of the following supplies should be kept at each carrel: alcohol, electro-tet, lubricants, flux, solder, cotton swab sticks, lens cleaning tissue, tubing, note paper, and small rolls of at least five kinds of connection wire.

Other Equipment Items listed in Body of Specifications (other than desks, chairs, file cabinets, storage units, etc.):

TV Alignment Tool Set	$ 15.
2- Tube Testers @ $250. each	500.
Drill Press and Accessories	175.
2- Grinding Wheel Units @ $80. each	160.
Engine Lathe and Accessories	1,000.
Test Console	1,200.

IV. *ADMINISTRATIVE ORGANIZATION AND PERSONNEL REQUIREMENTS*

To provide the support functions outlined above for the school districts, the audio-visual repair and maintenance unit would require the following personnel:

A. Director of the Unit

One highly qualified person is required to head and direct the entire program. This person, in addition to his administrative activities, would have primary responsibility for consultative and planning relationships. He would be basically responsible for all personnel engaged in maintaining, installing, and repairing audio-visual and other equipment.

A. (cont'd.)

The minimum hiring requirements for this individual would be: Degree in Electrical Engineering or equivalent; experience in repair and maintenance of electronic equipment; administrative and supervisory ability; pleasant and cooperative disposition; and a zeal for continued learning in the field of technology.

B. Supervising Foreman of the Unit

Working under the direction of the head of the unit, the foreman would provide direct supervision of the repairmen. He would schedule and assign jobs to repair technicians according to estimation of their abilities and with cognizance for rush and priority assignments. He would assist individual technicians to resolve complex repair and/or fabrication problems. He would have basic responsibility for the supervision and training of all technicians.

The minimum hiring requirements for this position would be: high school graduate; two years' experience in repair and maintenance of electronic equipment; some formal training in electronics; and a disposition conducive to supervising personnel.

C. Repair Technicians (8)

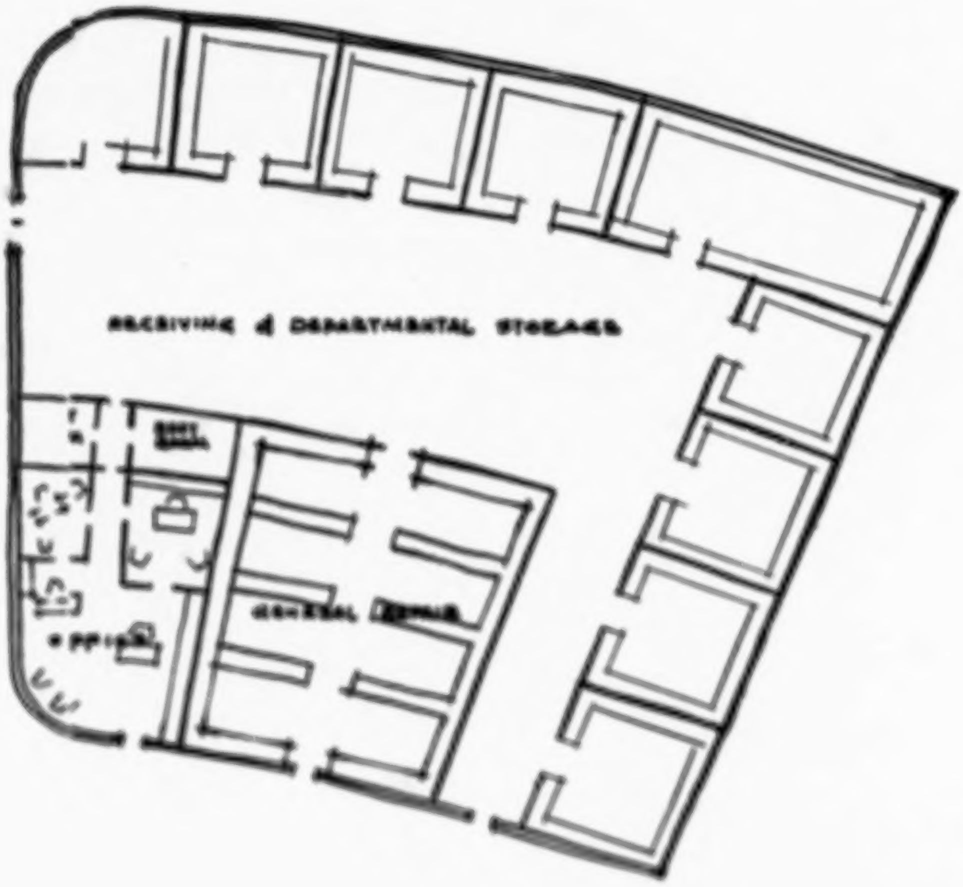
Under the supervision of the foreman, these men would repair, maintain, and install various types of audio-visual equipment and related systems. They would work from circuit diagrams, job orders, service manuals, and oral instructions requiring knowledge of electronics and general electrical theory. They must be able to diagnose equipment malfunctions using a variety of testing devices such as ohm and amp meters, sweep generators, oscilloscopes, tube testers, etc. They would repair malfunctions by replacing tubes, changing motors and switches, replacing wires, welding broken components, adjusting controls, etc. They must be able to clean, re-assemble, and test equipment to verify conformance to specifications. They would fabricate or assist in the fabrication of special electrical and electro-mechanical systems.

The minimum hiring requirements for these positions would be: high school graduate; one year's experience in repair of electronic and/or completion of formal training in electronics; and the ability to cooperate with people.

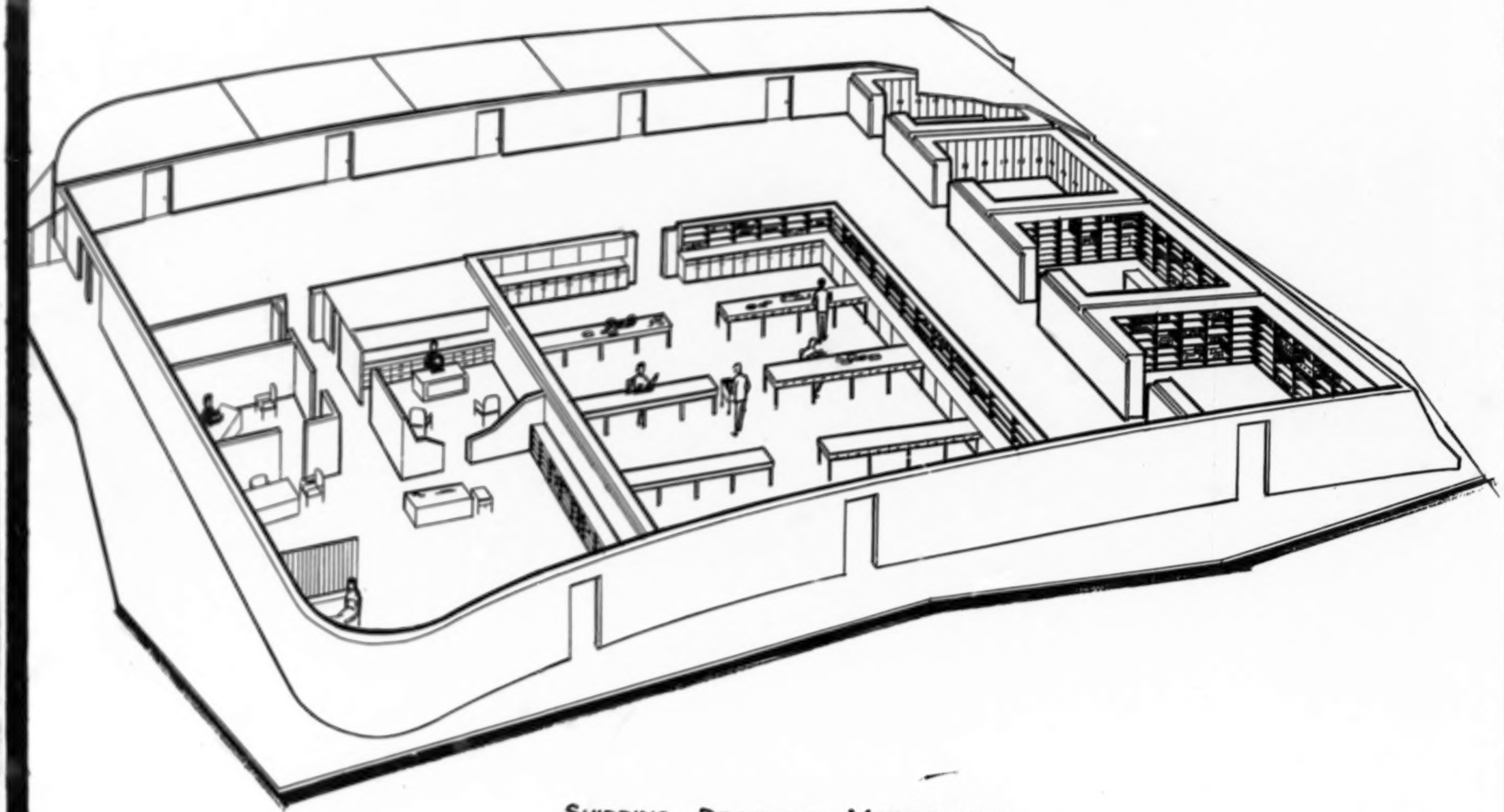
D. Clerk-Typist (1)

This individual would perform all of the clerical activities of the unit: typing, filing, record files, telephone, job orders, requisitions, and the other typical variety of clerical duties necessary in the operation of the unit.

The minimum hiring requirements for this person would be: high school graduate; type 35 to 45 words per minute; clerical aptitude; good telephone voice; and at least one year of office experience.


RECEIVING & DEPARTMENTAL STORAGE
GENERAL REPAIR
OFFICE

EQUIPMENT EVALUATION DEPARTMENT



SHIPPING – RECEIVING – MAINTENANCE

APPENDIX A. Enabling Laws for Cooperation Among Districts

As has been pointed out, for districts to cooperate effectively over a period of time, it is necessary that some kind of legal entity be formed. In many states the formation of such a legal body is presently prohibited -- or not provided for -- by law. On the following pages are five examples of laws that were written to make it possible for districts to cooperate among themselves.

MISSOURI REVISED STATUTES, 1959

70.210. Definition of Terms: -- As used in Sections 70.210 to 70.320, the following terms mean:

(1) "Governing Body", the board, body or persons in which the powers of municipality or political subdivisions are vested;

(2) "Political Subdivision", counties, townships, cities, towns, villages, schools, county library, road, drainage, sewer, levee and fire districts.

70.220. Political subdivisions may cooperate with each other, with other states, the United States or private persons: -- Any municipality or political subdivision of this state, as herein defined, may contract and cooperate with any other municipality or political subdivision, or with an elective or appointive official thereof, or with a duly authorized agency of the United States, or of this state, or with other states or their municipalities or political subdivisions, or with any private person, firm, association or corporation, for the planning, development, construction, acquisition or operation of any public improvement or facility, or for a common service; provided, that the subject and purposes of any such contract or cooperative action made and entered into by such municipality or political subdivision shall be within the scope of the powers of such municipality or political subdivision. If such contract or cooperative action shall be entered into between a municipality or political subdivision and an elective or appointive official of another municipality or political subdivision, said contract or cooperative action must be approved by the governing body of the unit of government in which such elective or appointive official resides.

70.230. Procedure for exercising power: -- Any municipality may exercise the power referred to in Section 70.220 by ordinance duly enacted, or, if a county, then by order of the county court duly made and entered, or if other political subdivision, then by resolution of its governing body or officers made and entered in its journal or minutes of proceedings, which shall provide the terms agreed upon by the contracting parties to such contract or cooperative action.

70.240. Lands may be acquired - how: -- The parties to such contract or cooperative action or any of them, may acquire, by gift or purchase, or by the power of eminent domain exercised by one or more of the parties thereto in the same manner as now or hereafter provided for corporations created under the law of this state for public use, Chapter 523, R. S. Mo., and amendments thereto, the lands necessary or useful for the joint use of the parties for the purposes provided in Section 70.220, either within or without the corporate or territorial limits of one or more of the contracting parties, and shall have the power to hold or acquire said lands as tenants in common.

70.250. Method of Financing: -- Any such municipality or political subdivision may provide for the financing of its share or portion of the cost or expenses of such contract or cooperative action in a manner and by the same procedure for the financing by such municipality or political subdivision of the subject and purposes of said contract or cooperative action if acting alone and on its own behalf.

70.260. Provisions which may be included in the joint contract: -- The joint contract may also provide for the establishment and selection of a joint board, commission, officer or officers to supervise, manage and have charge of such joint planning, development, construction, acquisition, operation or service and provide for the powers and duties, terms of office, compensation, if any, and other provisions relating to the members of such joint board, commission, officers or officer. Such contract may include and specify terms and provisions relative to the termination or cancellation by ordinance, order or resolution, as the case may be, of such contract or cooperative action and the notice, if any, to be given of such cancellation, provided that such cancellation termination shall not relieve any party participating in such contract or cooperative action from any obligation or liability for its share of the cost or expense incurred prior to the effective date of any such cancellation.

70.270. Sovereignty to be retained: -- Sovereignty shall be retained over any real property used under the terms of any contract or cooperative action within the jurisdiction and territorial limits of the municipality or political subdivision in which it is located, and to that extent shall be a limitation upon the contracting parties under the provisions of Sections 70.210 to 70.320.

70.280. Office of facility taken over may be abolished and duties transferred: -- The governing body of any municipality or political subdivision shall have the power to abolish the office of the facility taken over by any other municipality or political subdivision, and the powers and duties thereof may be transferred to the officer who is to perform them under the terms of the contract or cooperative action.

70.290. Immunities and liabilities of officers: -- All officers acting under the authority of the municipality or political subdivision pursuant to such agreement or cooperative action under the provisions of Sections 70.210 to 70.320 shall be deemed to be acting for a governmental purpose and shall enjoy all the immunities and shall be subject to the same liabilities which they would have within their own territorial limits.

70.300. Execution of Contracts: -- Whenever the contracting party is a political subdivision of this state, the execution of all contracts shall be authorized by a majority vote of the members of the governing body. Each contract shall be in writing and a copy filed in the office of the secretary of state and in the office of the recorder of deeds in the county in which each contracting municipality or political subdivision is situated.

70.310. Disbursement of Funds: -- All money received pursuant to any such contract or cooperative action, the the provisions of Sections 70.210 to 70.320, unless otherwise provided by law, shall be deposited in such fund or funds and disbursed in accordance with the provisions of such contract or cooperative action.

70.320. Suits may be brought in circuit courts: -- Suits affecting any of the terms of any contract may be brought in the circuit court of the county in which any contracting municipality or political subdivision is located or in the circuit court of the county in which a party to the contract resides.

70.325. Development and improvement of recreational facilities under agreement by city and U.S.; -- The governing body of any city is hereby authorized to enter into an agreement with the United States Corps of Engineers for the development and improvement of recreational facilities in federal reservoir areas as provided in Section 209 of the Flood Control Act of 1954, 68 Stat., 1266, 16 U.S.C. 460d.

STATE OF OREGON

Fifty-second Legislative Assembly - Regular Session; Engrossed Senate Bill 409, May 15th, 1963; Introduced by Committee on EDUCATION (at the request of Interim Committee on Education) and read first time March 12th, 1963.

(Excerpts of) A Bill for an Act relating to education and creating new provisions.

Be It Enacted by the People of the State of Oregon:

Section 1. It is the purpose of this Act to provide maximum excellence in education and as nearly equal educational opportunities for all the children of this state as is feasible under optimum local control. In order to accomplish this purpose, the Legislative Assembly intends that the intermediate education districts established under the provisions of this act shall succeed the rural school district and provide professional services and facilities in education and shall furnish such services and facilities, on a cooperative basis with local districts, as may further the intent and purposes of this Act.

……

Section 10. The intermediate education district or a combination of intermediate education districts may provide services and facilities, including but not limited to, central purchasing, library, curriculum material, special teachers and special education to local school districts within the intermediate education district or districts and to local school districts in adjoining areas.

MICHIGAN

PUBLIC ACT NO. 190

15.3291 (1) Definitions. Sec. 291a. As used in this chapter:

(a) "Intermediate school district" means the corporate body established in accordance with the provisions of this chapter.

(b) "Local school district" means a primary school district, a school district of the fourth class, a school district of the third class, a school district of the second class, a school district of the first class, or a special act school district.

(c) "Constituent school district" means a local school district whose territory is entirely within and is an integral part of an intermediate school district.

(d) "Board" means the board of education of the intermediate school district.

(e) "Superintendent" means the superintendent of the intermediate school district.

(f) "Special education" means education of a type designed especially for deaf, hard of hearing, blind, partially seeing, speech defective, homebound, mentally handicapped, crippled or otherwise physically handicapped, children having behavior problems, as are defined by the superintendent of public instruction.

(g) "Special education center" means a constituent school district which, by action of its board, contracts with the board of the intermediate district to provide special education to nonresident pupils.

(h) "Special education facility" means any program of special education instruction which is approved by the superintendent of public instruction.

(i) "Special education buildings and equipment" means any school housing and equipment acquired or prepared for, or used in, operating a special education facility approved by the superintendent of public instruction.

(j) "Special education supplies" means any consumable school supplies employed in special education.

(k) "Reorganized intermediate district" means an intermediate district formed by the consolidation of not more than 3 intermediate school districts as provided in section 302a.

15.3292 (1) Local districts constituting intermediate districts; powers, reorganization; annexation. Sec. 292a. As of the effective date of this chapter, those local school districts constituting a county school district, as determined by the filing of the most recent annual and statistical report required by the superintendent of public instruction, shall constitute the intermediate school district of that county. The intermediate school district shall possess all the rights and privileges of the county school district which it has succeeded except as provided in this chapter. When constituent school districts of more than 1 intermediate school district are reorganized into a single school district, the reorganized school district shall be constituent to the intermediate district designated by the board of education of the reorganized school district. If a decision has not been reached within 30 days after the effective date of the reorganization of the constituent districts, determination shall be made by the state board of education. Any constituent school district, by resolution of its board of education, may become constituent to another intermediate district to which it is contiguous if approval is given by the board of each intermediate district affected. If the intermediate district to which annexation is proposed has adopted the provisions of sections 307a to 324a of this chapter, the registered electors of the district to be annexed must vote to accept those provisions.

15.3293 (1) Board; members; election. Sec. 293a. Each intermediate school district shall be under the supervision and control of a board composed of 5 members elected as provided in this chapter, except that in reorganized intermediate districts the number of board members shall be 7 instead of 5, in accordance with the provisions of section 302a.

15.3294 (1) Election of board members; notice; term of office; filling vacancies; nomination procedure; ballots; failure to file nominating petitions. Sec. 294a. The members of the board shall be elected biennially on the first Monday in June by a body composed of 1 member of the board of education of each constituent school district, who shall be designated by the board of education of the constituent school district of which he is a member. The secretary shall send a notice by certified mail of the hour and place of meeting to the secretary of the board of education of each constituent school district at least 10 days prior to the meeting. The president and secretary of the board shall act as chairman and secretary, respectively, of the meeting. The term of office of each member elected to the board shall be for 6 years and shall begin on July 1 following his election, except as hereinafter provided. Not more than 2 members of the board shall be from the same school district unless there are fewer districts than there are positions to be filled. Any vacancy shall be filled by the remaining members of the board until the next biennial election. Notice of the vacancy shall be filed with the state board of education within 5 days after its occurrence. If the vacancy is not filled within 30 days after it has occurred, it shall be filled by the state board of education. Candidates for election to the board shall be nominated by petitions which shall be signed by not less than 50 school electors of the district who are registered to vote in the city or township where they reside. Any qualified elector shall be eligible to sign as many petitions as there are vacancies to be filled. Nominating petitions shall be filed with the secretary of the board not later than 30 days prior to the date of the biennial election. The secretary shall determine the sufficiency of said petitions, and the eligibility of the candidates therein nominated. The secretary shall cause to be prepared, printed or duplicated ballots for the biennial election, listing on said ballots the names of all candidates properly nominated. If no nominating petitions have been filed for a candidate to fill a vacancy then, in this event and only in this event, the chairman of the biennial election may accept nominations for that vacancy from the floor.

The provisions of section 538 of this act shall apply to petitions for candidates for board members of intermediate districts unless herein otherwise provided.

15.3294 (2) Popular election of board members. Sec. 294b. Members of the board shall be chosen at popular elections in any intermediate school district adopting the provisions of sections 294b to 294h of this act.

15.3294 (3) Submission of question to electors; form; resolutions of local boards. Sec. 294c. Any board may submit to the electors of the constituent school districts comprising such intermediate school district the question of adoption of sections 294b to 294h of this act. The question shall be in substantially the following form: "Shall the provisions of sections 294b to 294h of Act No. 269 of the Public Acts of 1955, as amended, providing for popular election of members of the intermediate school district board of education be effective within the constituent school districts of..................county?

Yes ( )
No ( )."

The board shall submit the question upon receipt of resolutions therefor adopted by a majority of the boards of education of constituent school districts within that intermediate school district representing more than 50% of the children on the last school census in the county district. Such resolutions of local boards of education shall all be adopted within a period of 3 months.

15.3294 (4) Time for submission; certificate of question. Sec. 294d. The question shall be voted upon by school electors residing within the constituent school districts of said intermediate school district who are registered to vote in the city or township where they reside. It shall be submitted at the first general November election or biennial spring election held more than 90 days after the secretary of the board shall file his certificate of such question with the county clerk of each county in which the constituent school districts comprising said intermediate school district is situate. The secretary of the board shall file such certificate with the county clerk of such county within 10 days following the action of the board or the local boards of education submitting the question.

15.3294 (5) Majority vote; termination of act. Sec. 294e. If a majority of the electors voting on the question shall vote in favor thereof, members of the board chosen thereafter shall be elected at biennial spring elections. Any intermediate school district having adopted the provisions of sections 294b to 294h of this act may in the same manner terminate the effect thereof within the intermediate district.

15.3294 (6). Board members; nomination; petitions, signatures, certifications; ballots; canvass. Sec. 294f. If any intermediate school district in which sections 294b to 294h of this act are effective, candidates for the office of member of the board shall be nominated by filing nominating petitions with the secretary of the board of the intermediate school district on or before 4:00 p.m., eastern standard time, in the afternoon of the 49th day preceding the first Monday in April.

The nominating petitions shall be subject to the provisions of section 538 of this act, except as herein otherwise provided. The nominating petitions shall contain signatures of school electors who are registered to vote in the city or township in which they reside equal in number to not less than 1% of the number of children in said district as determined by the last preceding school census, except that no candidate shall be required to file signatures of more than 5000 voters. Each sheet of the petition shall be circulated in only 1 city or township and the name of the city or township shall be stated in the affidavit of the circulator.

The secretary of the board of the intermediate school district shall within 14 days after filing certify the names and addresses of those candidates whose petitions have been found sufficient to the county election commission in care of the county clerk of each county containing territory which is constituent to the intermediate school district. The secretary of the board at the time of transmitting the names and addresses of the candidates shall certify the number to be elected and shall also have prepared and forward to the county election commission of each such county, a map showing the boundaries of the school district contained in said county. The county election commission shall cause to be prepared and distributed ballots for the election of members of the intermediate school district board in the same manner the ballots for the office of circuit judge are prepared and distributed.

The vote for members of the board shall be taken and canvassed in the same manner and by the same persons as are the votes for the office of circuit judge, except that the county board of canvassers shall forward the results of the election to the secretary of the appropriate intermediate school district instead of to the secretary of state.

The board of education of the intermediate school district shall canvass the votes from each county, a portion of which is contained within the district and shall determine which candidates received sufficient votes to be elected to the board. The secretary of the board shall deliver a certificate of election to those candidates declared to have been elected and shall at the same time notify them of the time and place of the next meeting of the board.

15.3294 (7) Eligibility of electors; ballots. Sec. 294g. All registered electors residing in a constituent school district of the intermediate school district shall be eligible to vote for members of the board regardless of other geographic boundaries. They shall receive ballots only for that intermediate school district in which they reside.

15.3294 (8) Filling vacancies by appointment. Sec. 294h. In intermediate school districts adopting the provisions of sections 294b to 294h of this act, the board shall fill any vacancy in its membership with an appointment to expire at the next biennial spring election at which time a member shall be elected for the balance of the term.

15.3295 (1) Eligibility for appointment. Sec. 295a. Any school tax elector in a constituent school district shall be eligible to election or appointment to membership on the board of an intermediate school district.

15.3296 (1) Board as body corporate; name; annual meeting; officers, duties; bond of treasurer; deposit of funds; accounts; separation of funds. Sec. 296a. The board shall be a body corporate under the style, "the board of education of the intermediate school district of the county (or counties) of ....," and under that name may sue and be sued. The board may choose any distinctive name for the intermediate district if prior approval has been given by the state board of education. The members of the board shall meet annually on or before the fourth Monday of July and shall organize by electing a president, a vice-president, a secretary and a treasurer. The president and vice-president shall be members of the board, but the secretary and treasurer need not be. They shall perform such duties as may be provided by law and prescribed by the policies, rules and regulations of the board not inconsistent with the provisions of this chapter or any other laws of this state. The treasurer shall post with the secretary of the board a bond in the amount approved by the board, conditioned upon the faithful performance of his duties.

The board shall select a depository for its school funds and may elect to invest school funds in those securities authorized for investment by local school districts. It shall keep a set of coded accounts to be approved by the superintendent of public instruction and shall have its books audited at least annually by a certified public accountant. The general fund of the board, the cooperative education fund of the board and the special education fund of the board shall be maintained separately and no commingling of funds shall be made.

15.3297 (1) Compensation and expenses of board members. Sec. 297a. Each member of the board shall receive such compensation as is approved by the county board of supervisors and the same rate for actual and necessary travel expenses as is allowed to members of the board of supervisors. The compensation and expenses shall be audited, allowed and paid from funds of the intermediate district.

15.3298 (1) Board; duties; superintendent and assistants; compensation; expenses; annual budget, procedure; tax allocation, assessment, levy, collection procedure; maps; employment of teachers; supervisory powers; cooperative programs; children in homes; oaths. Sec. 298a. (1) The board shall:

(a) Perform such duties as required by law and by the superintendent of public instruction, but shall not supersede nor replace the board of education of any constituent school district, nor shall it control or otherwise interfere with the rights of constituent districts except as provided in this chapter.

(b) Employ a superintendent and such assistants, including, in its discretion, a deputy, as it deems necessary for the best interest of the district and fix the compensation for the same. The compensation of the superintendent and his deputy and assistants, which shall include salaries and travel expenses incurred in the discharge of their official duties and the necessary contingent expenses of the office of the board and the superintendent for printing, postage, stationery, record books, equipment, office and telephone rental, rental of rooms for teachers' or school officers' meetings, pupils' mental and achievement tests, expenses incurred in the health and social service program of the office, elections conducted by the board, expenses incurred by the board in the legal performance of its duties, expenses incurred for heat, light, electricity, insurance, buildings and grounds maintenance, per diem of board members, and their expenses incurred in traveling in the discharge of their official duties, reference books, professional journals, instructional supplies and equipment, legal fees, janitorial supplies and equipment, shall be paid by the treasurer, after the same have been authorized by the board, from such amounts as have been levied and collected therefor by the county board of supervisors and from any other available funds. The board shall employ and contract for a term of not to exceed 4 years, a superintendent who shall have the qualifications and perform the duties as provided in this chapter. On or before the close of each term, or sooner if there is a vacancy, the superintendent's successor shall be employed as herein provided.

(c) Prepare an annual general budget which shall be in the same form as that provided for other school districts. On or before March 1 of each year the board shall submit such budget to a meeting of 1 school board member named from each constituent school district to represent such a district. At such meeting the president of the intermediate district board shall preside, the secretary shall keep the minutes and the representatives of constituent district boards shall by majority vote determine the maximum amount of the intermediate district general budget but shall not make final determinations as to line items in such a budget. Following such meeting the intermediate district board shall file its budget, the maximum amount of which shall not exceed that approved by the school board representatives of constituent districts, with the county clerks of the counties in which it has territory. Each county clerk receiving the budget shall deliver it to the tax allocation board in the same manner as other school district budgets are handled.

The tax allocation board shall receive the budgets from its county clerk, shall treat them as other school district budgets are treated and shall allocate tax rates to intermediate school districts for the purposes set forth in this act. When the intermediate district board has received an allocation on the basis of its budget, it shall certify for collection to the city and township officials concerned a statement of the amount of taxes to be levied, which certification shall be made at the same time and in the same manner as that of other school districts. The rate certified for levy shall not exceed the amount allocated.

On receipt of the statement from such board, the city and township officials responsible for the levying and collection of taxes shall spread on the tax roll an intermediate school district tax equal to the amount ordered spread, and shall collect such taxes in the same manner as other taxes are collected.

Taxes collected under the provisions of this chapter shall be paid over to the county treasurer in the same manner as other county taxes are paid over, and similar accounts and records shall be kept. The county treasurer shall pay over all funds received under this act to the treasurer of the board. County treasurers of counties in which fractions of the intermediate school districts operating under this act are situated shall pay over those funds collected under the act to the treasurer of the board.

Intermediate school district taxes shall be assessed, levied and collected as provided in Act No. 206 of the Public Acts of 1893, as amended, being sections 211.1 to 211.157 of the Compiled Laws of 1948. Budgets shall be submitted and intermediate school districts shall be governed by the provisions of Act No. 62 of the Public Acts of 1933, as amended, being sections 211.201 to 211.217 of the Compiled Laws of 1948.

(d) Receive from the county treasurer such reports of delinquent taxes due school districts as he is required by law to file with township and city clerks and compute from such report the amount of delinquent school taxes due each school district in the county. The county treasurer of each county, at the time of making monthly settlements with the several township and city treasurers of the county, shall file with the secretary of the board a statement of all delinquent school taxes which are included in the amounts sent by the county treasurer to the several township and city treasurers of the county, together with the descriptions upon which the delinquent school taxes have been paid. The board, upon receipt of such statements, shall compute the amount of delinquent school taxes and interest thereon included in the statement which are due each school district of the county and, within 30 days from receiving the statement from the county treasurer, shall give notice to the secretary of the board of education of each school district of the amount of delinquent school tax and interest thereon that belongs to his district and which was included in the amount sent by the county treasurer to the treasurer of the township or city in which his district is located.

(e) Prepare a map of the intermediate district annually as of July 1, showing by distinct lines thereon the boundaries of each constituent school district. One copy of such map shall be filed in the office of the superintendent, 1 copy shall be filed with each of the supervisors of the respective townships, and 1 copy shall be filed in the office of the superintendent of public instruction, and 1 copy shall be filed in the office of the secretary of state.

(f) Cause an annual school census to be taken by the agency and in the manner provided in sections 941 to 948 of this act, in each and every school district within the provision of this chapter.

(g) Furnish services on a consultant or supervisory basis to any constituent school district upon request of that district.

(h) Employ teachers meeting the qualifications as set up by the state board of education and the superintendent of public instruction for serving speech defective children, hard of hearing children who need lip reading training, mentally retarded, physically handicapped, emotionally distressed, homebound children of normal mentality and any other atypical children if the programs are previously approved by the superintendent of public instruction, and if no school district other than the intermediate district is able and willing to provide such services. The district, when the programs have been approved by the superintendent of public instruction, may be reimbursed in accordance with the provisions of sections 771 to 780 of this act.

(i) Direct, supervise and conduct cooperative educational programs in behalf of the constitutent (sic) school districts which request such services. The board may utilize any available funds not otherwise obligated by law and accept contributions from other sources, for the purpose of financing the programs. The funds shall be deposited with the treasurer in a special fund and shall be disbursed as the board of education shall direct. Notwithstanding any other provision of law, the board of supervisors may appropriate, and the boards of education of the constituent school districts may allocate available funds not otherwise obligated by law, for such educational programs. The board may employ teachers and take any other action necessary to direct, supervise and conduct such educational programs.

(j) Conduct cooperative programs mutually agreed upon by the boards of not more than 3 intermediate school districts.

(k) When directed by the board of supervisors, establish, if the board deems necessary, a school for those persons of school age who are housed in children's homes operated by the juvenile court or who are living at home but assigned to such school by a juvenile court. The board of education may lease or purchase sites for such schools, build, lease or rent housing facilities for such schools, may employ such teaching and supervisory staff as is necessary to operate such schools, is authorized to make rules and regulations covering the operation of such schools, may exclude students for reason of persistent misbehavior, or bodily conditions and habits disturbing to the orderly conduct of the school, is authorized to classify and promote students for instructional purposes, and otherwise do all those things necessary to the proper conduct of such a school.

(2) Any member of the board may administer oaths for the qualifying of board members and oaths required in any other transaction connected with, or related to, the educational program of the intermediate school district.

15.3299 (1) Superintendent and deputy; eligibility. Sec. 299a. Persons eligible to hold the office of superintendent or deputy superintendent shall possess the following minimum qualifications:

(a) Forty-five months' experience as a teacher or administrator in public schools.

(b) Possess a teacher's certificate issued by the state board of education of this state and a master's degree in education from a college or university approved by a recognized accrediting agency. For any person holding the office of superintendent on the effective date of this chapter, the requirements of this section may be waived while he continues in such capacity in the same district or a reorganized district which includes this district.

15.3300 (1) Bond of superintendent. Sec. 300a. The superintendent within 10 days from his appointment shall execute a surety bond approved and paid for by the board and filed with the president of the board in the penal sum of $1,000.00 conditioned that he shall faithfully account for and pay over to the proper persons all moneys which may come into his hands by reason of his holding such office.

15.3301 (1) Powers and duties of superintendent. Sec. 301a. The superintendent and board in all respects shall be the legal successor to the powers, duties and responsibilities of the county superintendent and county board of education. The terms "county commissioner of schools" and "county superintendent of schools" when used in other acts shall be construed as "superintendent" as defined in this chapter. The superintendent shall have all powers and duties granted to the county commissioner of schools and county superintendent of schools by any and all other acts unless such powers and duties are inconsistent with this chapter. The superintendent shall be the executive officer of the board and shall:

(a) Put into practice the educational policies of the state and of the board.

(b) Recommend in writing all employees and suspend any employee for cuase until the board considers the suspension.

(c) Supervise and direct the work of assistants and other employees of the board.

(d) Recommend in writing all teachers to the boards of education in constituent districts not employing local superintendents.

(e) In constituent districts not employing local superintendents, suspend any teacher for cause until the board of education of the district employing the teacher considers the suspension.

(f) Classify and control the promotion of pupils in constituent districts not employing local superintendents.

(g) Supervise and direct the work of the teachers in constituent districts not employing local superintendents.

(h) Receive the institute fee provided by law, if approved by the board, and pay the same to the treasurer.

(i) Examine and audit the books and records of any constituent school district when directed to do so by the superintendent of public instruction.

(j) Act as assistant conductor of institutes appointed by the superintendent of public instruction, and perform such other duties pertaining thereto as said superintendent shall require.

(k) Perform such duties as the superintendent of public instruction or the board prescribes, receive all forms and communications which may be sent to him by the superintendent of public instruction, dispose of the same as directed by the superintendent of public instruction, make reports as may be required by the superintendent of public instruction and at the close of his term of office deliver all records, books and papers belonging to the office to his successor.

(l) Examine the certified copy of statement of moneys proposed to be levied by the constituent districts required by law to be filed with the township clerk and the board of supervisors at the October session of the board and notify the secretary of the board of education of any local district that fails to file such statements as are required by law or that has failed to qualify for aid under the general appropriating act made for the purpose of aiding in the support of the public school districts of the state of such failure.

(m) To make reports in writing to the boards of education of local districts in regard to all matters pertaining to the educational interests of the local districts.

15.3302 (1) Combination to form district; submission of question, procedure; interim board, powers and duties; transfer of accounts. Sec. 302a. Not more than 3 adjoining intermediate school districts may combine to form a single intermediate school district when the reorganization has been approved by a majority of the electors voting on the question of the constituent districts of each intermediate district voting on the question in the annual elections of their constituent districts. The question of combining intermediate districts may be submitted by a resolution of the boards of the intermediate districts meeting in joint session, if approval of the election has been given by the state board of education. The question shall be submitted when petitions signed by a number of qualified electors of the constituent school districts of each intermediate school district, who are registered to vote in the city or township where they reside, equal in number to not less than 5% of the number of school memberships of the constituent districts of that intermediate district have been filed with the secretary of the board of any one of the intermediate school districts. On receipt of sufficient petitions the secretary shall apply for approval to the state board of education within 30 days and he shall cause the question to appear on the ballot of the next annual school election after such approval has issued. The ballots shall be furnished by the board of each intermediate school district for its constituent districts and shall be in substantially the following form:

"Shall the intermediate school districts of. . . . . .and. . . . . . . counties be organized as a single intermediate district?

Yes (   )
No (   )".

The provisions of this chapter shall become effective in the combined intermediate districts 30 days after the date of the last election in a constituent school district provided that the consolidation has been approved by a majority of the electors voting on the question in each of the participating intermediate school districts, and thereafter the intermediate district shall be considered a single intermediate district subject to the provisions of this chapter. The members of the boards of the original intermediate districts shall act as an interim board until a board of the combined intermediate district has been chosen, and shall possess all the powers and duties of a board as provided in this chapter. The person chosen by the interim board as superintendent shall serve only until his successor has been chosen by the elected board. The secretary of the board of the intermediate district having the largest number of children in membership in its constituent districts at the time of reorganization shall call the members of the interim board into session for the purpose of organization, on the day the reorganization becomes effective, unless that day is a Sunday or holiday, in which case it shall be the next succeeding day not a Sunday or holiday. The secretary of the interim board shall take all necessary steps to provide for the election of a board of the reorganized intermediate district in accordance with the provisions of sections 294b to 294h of this act. At the first election there shall be elected 3 members of a board for 6 years, 2 for 4 years and 2 for 2 years. Each of the original intermediate districts shall have at least 2 members on the new board. Thereafter their successors shall be elected biennially for a term of 6 years. The time from the date of election to the next July 1 shall be considered 1 year. The combined intermediate district shall operate as a single intermediate district from the effective date of the reorganization. Within 10 days following the reorganization, all accounts of each intermediate school district becoming a part of the reorganized district shall be audited in accordance with provisions established by the interim board. The provisions of the contracts of the superintendents in force as of the effective date of reorganization shall continue in effect to time of termination except as to positions as superintendents.

15.3303 (1) Annexation of districts; procedure; appointment of board members. Sec. 303a. Any intermediate school district may be annexed to another intermediate school district whenever the board of the annexing district by resolution has determined, and a majority of the registered and qualified school electors of the intermediate district becoming annexed, voting on the question at an annual or special election in the constituent districts, has approved the annexation. If the annexing intermediate district has adopted the provisions of sections 307a to 324a of this act, the electors of the constituent districts of the intermediate district to be annexed must vote to accept those provisions. The vote on the question shall be by printed or duplicated ballot furnished by the board of the district to be annexed. Before the election is held, the board of the annexing district shall obtain the approval of the state board of education of the proposed annexation. Within 10 days of the holding of such an election, each constituent district shall file the result with the secretaries of his respective intermediate district, and 5 days thereafter such secretaries shall file the result with the secretaries of the boards of the annexing district. Within 15 days after the election approving the annexation, the members of the board of the annexed district shall account to the board of the annexing district for the funds and property in their hands and shall turn over the same to the board of the annexing district. All property and moneys belonging to the annexed district shall become the property of the annexing district and all outstanding indebtedness of the annexed district shall become the liability of the annexing district. Upon receipt of the funds and property by the board of the annexing district, the members of the board of the annexed district shall be released from liability therefor and their offices terminated. The effective date of the annexation shall be the latest date on which an election was held in a constituent district of the annexed intermediate district. The secretary of the board of the annexing district shall give written notice of the annexation to the state board of education within 15 days of the annexation. Within 30 days after the effective date of annexation, the board of the annexing district shall appoint 2 tax electors of the constituent districts of the annexed district to membership on the board of the reorganized district, who shall serve until July 1 following the next biennial election, and notification of the appointments shall be filed with the state board of education. If the appointments are not made within the 30 days, the state board of education shall make the appointments. At the next biennial election, members of the board shall be elected to the number and for the terms as required in section 302a of this chapter. The terms of the members of the board whose terms have not expired shall determine the terms of the additional members to be elected.

15.3304 (1) Area studies; petition; plan; committee. Sec. 304a. Area studies based on a portion or all of an intermediate district or on not more than 3 intermediate districts or on such fractions of contiguous intermediate districts as may be involved shall be authorized by the superintendent of public instruction upon the receipt of a petition and plan for the proposed study. A petition and plan for an area study may be made by the board or the superintendent of any intermediate district to be included within the study or the petition accompanied by a plan may be signed by registered and qualified electors numbering at least 5% of the total vote cast within the cities, townships and counties lying within the area for the office of secretary of state in the last preceding general election at which a secretary of state was elected. The plan for the area study, which shall be subject to the approval of the superintendent of public instruction, shall prescribe the membership of the area study committee, hereafter referred to as the "committee". The membership of the committee selected shall be proportionately representative of urban and rural areas as nearly as practicable. The superintendent of public instruction shall prescribe the procedures for the establishing and terminating of area studies.

15.3305 (1) Powers and duties of area committee. Sec. 305a. The area committee shall:

(a) Make comprehensive study of the educational conditions and needs of the area and recommend changes in local school district organization which will afford better educational opportunities, more efficient and economical administration of the public schools, and a more equitable sharing of public school support.

(b) Confer with school authorities and residents of the school districts of the area, hold public hearings, and furnish to school officials and to the public information concerning educational conditions and needs of school districts in the area.

(c) Make a report to the superintendent of public instruction within 2 years after the date of its appointment. The report shall deal with the educational conditions and needs of the local school districts of the area and shall include maps showing boundaries of existing school districts, the location of school lands and buildings, school transportation routes and the boundaries of recommended school districts.

15.3306 (1) Contributions to area study committee. Sec. 306a. An area study committee may accept contributions toward the cost of making the area study. Contributions may be in money, services or materials.

15.3307 (1) Election as to special education program; rescission. Sec. 307a. Sections 307a to 324a of this act shall become effective whenever a majority of the school electors of an intermediate school district, present and voting, in any one year at the several annual and special school elections in the constituent school districts, vote as provided in section 308a to come under the provisions. The effect of the provisions of these sections may be rescinded by the same process.

15.3308 (1) Ballots; printing, distribution; notice; conduct of election. Sec. 308a. Whenever the board directs that the question of coming under the provisions of sections 307a to 324a shall be submitted to the school electors of an intermediate school district, the secretary of the board shall cause to have printed and distributed sufficient ballots so that the school electors of each constituent school district may vote on the question at its next annual school election, and shall give notice to constituent school districts at least 60 days in advance of the annual school election that the question of coming under the provisions of these sections shall be submitted to the electors of the district. The board shall employ the form of ballot prescribed in section 316a for this type of election and by resolution shall determine a millage limit on taxation to be submitted to the electors at the next annual election. The secretary of the board of education of each constituent district shall give notice to the electors in the district of the question to be submitted. The notice shall be given at the same time and in the same manner as provided in this act for notice of annual school elections for the district. In intermediate districts where 1 or more constituent school districts do not have an annual general election, the board shall call a special election in those districts at which the question of coming under the provisions of sections 307a to 324a shall be submitted to the school electors. The special election shall be conducted by the constituent school districts on the date set by the board to coincide with the annual general elections of other constituent districts.

15.3309 (1) Appointment of election inspectors; canvass. Sec. 309a. The board of education of each constituent school district shall appoint a board of election inspectors to conduct the balloting on the question of coming under the provisions of sections 307a to 324a and the board of education shall canvass the vote as taken and report the results of the canvass to the secretary of the board of the intermediate district by certified mail within 10 days of the election.

15.3310 (1) Canvass of returns. Sec. 310a. Not more than 45 days after the holding of the election, the board shall meet and canvass the election reports of the constituent districts. The findings of the board shall be a matter of record in its minutes and shall be distributed by the secretary to the boards of education of the constituent districts and to the superintendent of public instruction.

15.3311 (1) Special education budget. Sec. 311a. Each board of an intermediate school district coming under the provisions of sections 307a to 324a shall prepare annually a special education budget, which shall be in the same form as that provided for other school districts, and shall be delivered to the county clerks of the counties in which the district is located. Each county clerk receiving the budget shall deliver it into the hands of the tax allocation board in the same manner as other school district budgets are handled.

15.3312 (1) Tax allocations. Sec. 312a. County tax allocation boards shall receive special education budgets from their respective county clerks; shall treat them as other school district budgets are treated; and shall allocate tax rates to intermediate school districts for the purposes set forth in sections 307a to 324a. The allocations shall be handled in the same manner as other allocations for school districts. The allocations shall not be made within the 15-mill limitation and may not exceed the limit authorized by the election at which these sections are placed in effect.

15.3313 (1) Certification of allocation for collection. Sec. 313a. When the board has received an allocation on the basis of its special education budget, it shall certify for collection to the several municipal and township officials concerned, a statement of the amount of taxes to be levied. The certification shall be made at the same time and in the same manner as other school districts but the rate certified for levy shall not exceed the amount allocated.

15.3314 (1) Levy and collection of taxes. Sec. 314a. On receipt of the statement from the board, the municipal and township officials responsible for the levying and collection of taxes shall spread on the tax roll a special education tax equal to the amount ordered spread, and shall collect the taxes in the same manner as other taxes are collected.

15.3315 (1) Payment of taxes collected. Sec. 315a. Taxes collected under the provisions of section 314a shall be paid over to the county treasurers in the same manner as other county taxes are paid over, and similar accounts and records shall be kept; and the county treasurers shall pay all funds received under section 314a to the treasurer of the board.

15.3316 (1) Form of ballot. Sec. 316a. The ballot to be used in referring the question of the adoption of sections 307a to 324a to the school electors of an intermediate school district shall be set forth in the following form:

"Shall the intermediate school district of. . . . . .county, state of Michigan, come under the provisions of sections 307a to 324a of the school code of 1955, which are designed to encourage the education of handicapped children if any annual property tax levied for administration is limited to . . . . .mills?

Yes ( )
No ( )".

15.3317 (1) Special education programs; employees; funds, appropriation and expenditure. Sec. 317a. Boards coming under the provisions of sections 307a to 324a shall operate special education programs in those instances where the service is not available in special education centers. The boards may employ teachers and other personnel, and provide for their transportation, purchase and maintain special education supplies and equipment, and secure proper office space and supplies. Boards shall not appropriate funds to maintain or construct buildings to house special education classes unless the buildings are owned by constituent school districts and are under the administration of the board of education of a special education center. Boards shall not expend special education funds for purposes other than those set forth in sections 307a to 324a.

15.3318 (1) Transportation of children. Sec. 318a. Boards maintaining special education programs may carry children in membership in the same manner as local school districts and shall be entitled to their proportionate share of any state funds available under the law in subsidy for such programs.

15.3319 (1a) Payments to special education programs; computation; reimbursement. Sec. 319a. Boards operating under sections 307a to 324a shall make payments from special education funds to those constituent districts maintaining special education centers. The payments shall be computed in the following manner: The per capita cost of each type of special education in each constituent facility shall be computed. From this amount shall be deducted the current per capita state subsidy, including membership, as well as special education grants, for each type of special education. All or part of the difference resulting, multiplied by the number of pupils educated, shall be reimbursable by the board. If the funds are not sufficient to make up all this difference, a like percent of the difference shall be paid to all constituent centers in the intermediate school district.

15.3320 (1) Grants fro special education buildings. Sec. 320a. The board may make grants of moneys to constituent districts operating special education centers for the purpose of building special education buildings or purchasing land or special education equipment, if prior to the granting of the funds the board of education of the constituent district wherein the center is located has contracted to receive nonresident children into the facility for a period of at least 15 years after the date of contract.

15.3321 (1) Long term contracts; nonresident pupils. Sec. 321a. The board may enter into long term contracts with constituent districts. The contracts shall provide that the constituent districts are bound to accept nonresident pupils into specified special education facilities in return for and in consideration of grants in aid for the construction of special education buildings and the purchase of special education buildings and the purchase of special education equipment or land.

15.3322 (1) Contracts to accept special education pupils. Sec. 322a. Any constituent district maintaining a special education facility approved by the superintendent of public instruction may enter into contracts with the board and shall become a special education center by contracting with the board to accept those nonresident pupils assigned into its facility by the board.

15.3323 (1) Payment of special education funds. Sec. 323a. Special education funds held by the treasurer for the board shall be paid out by him on order of the board.

15.3324 (1) Visitation committee; membership; appointment; duties. Sec. 324a. The board, each year, shall appoint a committee of at least 5 persons, to consist of at least 2 school superintendents and 3 board members of constituent districts, who, along with the superintendent of public instruction or his agent, shall visit special education facilities in the county and advise the board relative to the administration of sections 307a to 324a.

15.3325 (1) Combination of intermediate districts; reorganization; state aid. Sec. 325a. On and after July 1, 1963 any intermediate district, the constituent school districts of which had a school membership of less than 5,000 as of the fourth Friday after Labor Day of the preceding school year, shall be subject to sections 325a to 326a. Such intermediate district before July 1, 1964 shall combine with 1 or 2 adjoining intermediate districts, as provided in section 303a, resulting in a reorganized intermediate district, the constituent districts of which had a membership of 5,000 or more on the fourth Friday after Labor Day of that school year. If 3 adjoining intermediate districts reorganize and if the combined membership of the constituent districts thereof is less than 5,000, then such a reorganized intermediate district shall have met the requirements of this section by such reorganization. Any intermediate district which has voted a millage for special education and is providing special education services shall not be subject to the provisions of sections 325a and 326a, and shall be entitled to state aid on the same basis as intermediate school districts having a combined membership of the constituent districts of 5,000 or more.

15.3326 (1) Noncompliance with combination provisions; forfeiture of financial benefits. Sec. 326a. Any intermediate school district which fails to comply with the provisions of section 325a shall forfeit all financial benefits to which it might be entitled as the result of legislative appropriations for school aid purposes.

15.3327 (1) Investment of funds. Sec. 327a. The treasurer of any county, when authorized by resolution of the board of an intermediate school district, shall invest special education funds of such district. Investments shall be restricted to the following:

(a) Bonds, bills or notes of the United States, or obligations, the principal and interest of which are fully guaranteed by the United States, or obligations of the state.

(b) Certificates of deposit issued by any state or national bank organized and authorized to operate a bank in this state.

15.3328 (1) State aid; increases. Sec. 328a. Notwithstanding the provisions of any other act, no intermediate school district established under this act shall receive less state aid than the corresponding county school district, as established under sections 291 to 308 of this act, received during the fiscal year ending June 30, 1962 under the provisions of Act No. 312 of the Public Acts of 1957, as amended, and no such district shall receive a greater percentage increase in state aid than the percentage increase in the per pupil allowance granted to all other school districts under the provisions of Act No. 312 of the Public Acts of 1957 for the fiscal year ending June 30, 1963 as compared to the fiscal year ending June 30, 1962.

15.3291-15.3328 (Repealed by Pub Acts 1962, No 190 eff-----. For equivalent provisions, see 15.3291 (1) - 15.3328 (1).

THE BOARD OF COOPERATIVE EDUCATIONAL SERVICES, NEW YORK STATE

BOCES, as it is commonly called, provides shared services for the eight school districts of the First Supervisory and for the four other component districts it serves: (l) Bedford Central District No. 2, Mount Kisco, (2) Chappaqua, (3) Ossining, and (4) Peekskill. The New York State Education Department believes that pupils in rural, village, suburban and small city schools of the state are entitled to the same type and quality of educational services and opportunities as those enjoyed by pupils in large city school systems. By combining their resources through BOCES and sharing personnel these schools can secure specialized personnel and other special services that they might not be able to provide as effectively or as economically if undertaken on their own. In this way BOCES has helped the schools develop a number of needed new services and expand their educational programs.

The combination of local districts as they now exist in this area or as they would exist according to the state's master plan together with BOCES offers unique structural and educational program advantages. While local districts should be large enough to be efficient they should be small enough to retain the interest of the electorate in education. Sharing allows the necessary teamwork among local programs -- technical and vocational education and special education for handicapped, etc. -- so that broad opportunities and local district autonomy can be achieved.

Financing BOCES

BOCES is a State-sponsored program. The State provides financial assistance to the schools participating in service programs by paying indirectly through BOCES part of the expenses involved -- in most instances more than 50% -- thus making the property tax cost of these services, which are subscribed to by the individual school districts as needed, relatively moderate. No service can be imposed on a school district and the schools request from BOCES the types and amounts of special services they desire. All school districts, whether or not they subscribe to any instructional services, contribute toward the administrative costs of BOCES in the ratio that the full valuation of their district bears to the total valuation of all the twelve districts which constitute BOCES 1, Westchester.

Services Provided by BOCES

The individual school district may contract for one, any or all of the following services:

1. Special Education

More than three-hundred pupils from the twelve districts will be provided special education in these classes in 1963-64.

a. Classes for Retarded Pupils - This includes classes conducted for educable (moderately retarded - 50-75 I.Q.) and classes for the trainable (severely retarded - below 50 I.Q.).

b. Classes for Children with Emotional Problems and/or Brain Injury (without mental retardation) - This is a program for pupils whose needs cannot be met in the regular public school classrooms. These students need help with their specific academic disabilities and they need a structured and predictable school situation. They are given a well-structured environment, security and careful teaching in small groups (usually no more than 7-9). A psychologist, a school social worker and a psychiatric consultant assist the specially-trained teachers in meeting the needs of each child individually.

c. Itinerant Services for Children with Impaired Vision - Partially-sighted pupils and blind pupils are tutored by specially trained teachers who work carefully with them and with their classroom teachers in several of the schools.

2. Vocational and Technical Education

The new Northern Westchester Technology Education Center, located on Fox Meadow Lane, a few hundred feet from the intersection of Rts. 202 and 132 in Yorktown Heights, New York, is now beginning to fill the need to provide the non college bound yough of this area with interesting and profitable trade and technical education. The building, first of three proposed buildings designed for vocational and technical education, was completed in the fall of 1962.

The program now consists of offers in (1) auto mechanics, (2) beauty culture, (3) practical nursing, (4) technical electronics, and (5) trade electricity. Four new curricula are being added in 1963-64: (1) carpentry, (2) dental assistant, (3) oil burner service and repair, and (4) ornamental horticulture. Other curricula will be added as the demands of the schools and placement opportunities require.

Admission to the school is handled by the counselors of the local schools in cooperation with the Vocational Counselor at the Center and the Director of Vocational Education. Interest, aptitude and ability to profit from the course elected are the major factors in the admission process. One hundred sixty students attended the Technology Center the first year and the estimated enrollment for 1963-64 is 350.

Students attend this school for three hours each day and spend the remainder of their day in their home schools. The credits earned for vocational and technical courses may be used to fulfill the requirements for graduation from high school. After graduation, the student is assisted in securing employment by the Center's vocational counselor working in conjunction with the home school counselor, employment office counselors, trade unions, employers' associations and other groups concerned.

3. Guidance Center Testing and Counseling Service

Established in 1952, the BOCES Guidance Center has provided special testing and counseling for more than 10,000 students of Northern Westchester the past eleven years. Its major purpose is to complement the work of the counselors of the local schools by providing additional facts and assistance about the students that it might be difficult or impossible to provide otherwise. It has become an integral and important part of the guidance program of many of the schools.

4. Northern Westchester College Conference

This conference sponsored by BOCES, in cooperation with John Jay High School, Katonah, has been held annually for the past seventeen years. It is attended by some 150 college admissions directors from the colleges in which at least six or more students are interested and by 1,000 to 1,200 juniors from the twelve high schools of the area. Each student has an opportunity to interview the admissions official from any four of the colleges about which he desires additional information.

5. Surveys

Another important BOCES service to the schools is that of making surveys. The following have been made to date: (1) Survey of Exceptional Children in 1954-55; (2) Vocational Education Survey in Cooperation with BOCES 2 (Southern Westchester) in 1957-59; (3) Survey of Housing for Retarded Pupils in 1959-60; (4) Survey of Children with Minimal Brain Injury and/or Emotional Problems Needing Special Programs in 1961.

6. Other Special and Instructional Services

These include school counseling, group counseling, school psychology, psychiatric consultation, school social work, speech and hearing therapy, reading consultation, summer reading clinic, curriculum research coordination, art teaching, vocal music teaching, driver education, school librarian service, and data processing.

While each of these services is important to the schools which subscribe to them, three which are new deserve special mention.

a. Group Counseling - Under the provisions of a research grant, special counselors are studying the benefits of counseling youngsters in groups. Usually eight pupils of Junior High School or upper elementary school meet simultaneously and weekly with the counselors for forty-five minutes to discuss school life. The experiment is designed to determine whether or not pupils improve in home and/or school adjustment and whether or not their school marks improve after group counseling.

b. Curriculum Research - The research grant for group counseling ($68,000) together with projects developed by the research coordinator will amount to approximately $250,000 for the three-year period ending in 1964. Major investigations relate to the study of automation in education (Can automation free teachers to give more attention to individual learning problems in their classes?) and to the vocational training and placement of students with minimal brain injury or emotional problems. Separately, our schools cannot amass very much money for curriculum research but together they can do much. Eventually it is possible that the research center will also be a resource for educational materials available to any teacher in northern Westchester.

c. Data Processing - Eight school districts are sharing the services of a central data processing center. These schools have census, attendance, schedule, report card and payroll information placed upon punched cards so that the local schools may eventually be relieved of much of the burden of these clerical tasks. The primary objectives of the participating schools are to relieve professional personnel of non-professional tasks and to make more information available to districts faster so that better decisions can be made and better educational programs developed.

7. Pupil Transportation

In addition to all the above services, BOCES also provides, at the request of the schools, transportation of pupils in the Special Education and Vocational Education Programs.

8. Administrative Services

The Director of BOCES Administrative Services who also supervises the business affairs of BOCES -- is available to assist districts in business affairs, organize meetings of business, maintenance and transportation personnel and supervise BOCES transportation and educational data processing.

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT

EDUCATION LAW

CHAPTER 747

AN ACT to amend chapter eight hundred sixty-one of the laws of nineteen hundred forty-eight, entitled "An act to authorize the establishment of intermediate school districts," and the education law, in relation to intermediate school districts

Became a law April 15, 1953, with the approval of the Governor. Passed by a majority vote, three-fifths being present

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section one of chapter eight hundred sixty-one of the laws of nineteen hundred forty-eight, entitled "An act to authorize the establishment of intermediate school districts," is hereby amended to read as follows:

Section 1. In order to improve educational opportunities in rural areas by overcoming the handicaps in rural education that arise from sparsity of population and from other causes and to provide an organization that will enable local school districts to combine their resources for the effective and economic provision of educational services, it is hereby declared to be the policy of the state that present school districts, except city school districts, cooperate in order that additional services not now feasible or available may be provided for the children of the community. To such end new intermediate districts should be formed, consisting of combinations of such present school districts as in the judgment of the commissioner of education are of sufficient size, suitable geographically, and with sufficient pupil population and financial support to provide the additional services contemplated by this act.

§ 2. Article forty of the education law, as added by chapter eight hundred sixty-one of the laws of nineteen hundred forty-eight, subdivision one of section nineteen hundred fifty-seven having been amended by chapter eight hundred twenty-two of the laws of nineteen hundred forty-nine and section nineteen hundred fifty-eight having been last amended by chapter seven hundred sixty-eight of the laws of nineteen hundred fifty-two, is hereby amended to read as follows:

ARTICLE 40

Section 1950. Formation of intermediate school districts.
1951. Intermediate council.
1952. Intermediate board of education.
1953. Superintendent of the intermediate district.

1954. Appointment of teachers and certain other employees in the intermediate district.
1955. School sites; construction and alteration of buildings; bond issues.
1956. Levy and collection of taxes.
1957. State aid.
1958. Establishment of boards of cooperative educational services pending the creation of intermediate districts.

§ 1950. **Formation of intermediate school districts.** 1. The commissioner of education in his discretion is hereby authorized and empowered to lay out, by order, areas made up of contiguous school districts and having a sufficient pupil population, as intermediate school districts. The commissioner of education is further authorized to fix, determine and define the boundaries thereof. Such order, if made, shall be premised upon a petition to the commissioner of education signed by one hundred or more qualified voters within any proposed area or by a majority of the trustees and members of boards of education of school districts within the area seeking the formation of such an intermediate district. The order shall be entered in his office and copies filed with each of the town and district clerks of any town or district lying, in whole or in part, within the intermediate district.

2. After such order has been made the commissioner of education shall call a meeting of the members of boards of education, trustees and school directors of the districts and towns, or portions thereof, lying within the intermediate district. Notices of the time and place of such meeting shall be mailed to the last known address of each of such officials. Such meeting shall be organized by the election of a chairman and clerk and shall consider and determine whether school meetings in each of the school districts comprising the intermediate district shall be called for the purpose of deciding whether the intermediate district, as laid out by the commissioner of education, should be established. A copy of the minutes, certified by the clerk, shall be transmitted to the commissioner of education.

3. If a majority of the local school officials present and voting have favored the call of a further meeting, the commissioner of education shall issue an order directed to the board of education or trustees of each of the school districts within the intermediate district directing them to call a special meeting of the voters of their respective districts for the purpose of determining whether an intermediate district as laid out by the commissioner of education should be established. Such meeting shall be held in the principal schoolhouse or other suitable place as designated by the boards of each of the districts and shall be held at the time designated by the commissioner of education. If, within five days after service of such order, any board or trustee has failed to call such a meeting, the district superintendent shall proceed to give the necessary notices. Such notices shall be given by posting notices in six conspicuous places at least ten days before the meeting. In union free and central school districts, in addition to the

posting of such notice, a copy thereof shall be published at least three days before the meeting in a daily or weekly newspaper published within the districts or in a newspaper circulating therein. Each such district shall be responsible for its costs in posting and publishing the notice.

4. Each such meeting shall be organized by the selection of a chairman and clerk thereof. The chairman shall appoint two inspectors of election and action shall be taken by ballot. In each district, statements of the result, signed by the two inspectors and countersigned by the clerk, shall be immediately forwarded to the commissioner of education. Upon receipt of such statements the commissioner shall determine whether a majority of all votes cast is in favor of the establishment of such district and if so, he shall make an order establishing such district and designating its name. Such order shall take effect July first next following the date of the order.

5. If the commissioner finds that the proposition was lost, it may not be presented again within a period of twelve months. Thereafter, the proposition may again be resubmitted to the voters by order of the commissioner of education upon receipt by him of a petition seeking such submission signed by a majority of the members of the boards of education, trustees and school directors within the intermediate district.

§ 1951. **Intermediate council.** 1. There shall be constituted a body to be known as the intermediate council which shall be made up of five members of each board of education having a membership of five or more and each member of each board of education having a membership of less than five of the school districts comprising the intermediate district which maintain a school offering instruction through grade twelve and one member of each board of education, trustees, or the sole trustee from each other school district comprising the intermediate district, and school directors, in office, of the towns, or portions thereof, comprising the intermediate district. The first meeting of such council shall be called by the commissioner of education at least twenty days prior to the taking effect of the order establishing any new intermediate district at a time and place fixed by him. The meeting shall proceed to organize, electing a president and a secretary from their own membership who shall hold office until the second Tuesday of January. Successors shall be chosen at each annual meeting who shall hold office for one year. Each school director shall remain a member of the council until the expiration of his term of office or until his death, resignation or inability to act prior to the expiration of his term of office. Thereafter the office of school director held by such person shall be discontinued.

2. The intermediate council shall meet annually on the second Tuesday in January for organization, election of officers and to transact such other business as may come before it, in accordance with the procedure fixed in the bylaws.

All action by the council shall be by majority vote of those present and voting except that action taken under paragraph d of this subdivision shall be by two-thirds of those present. All expenses incurred by the council shall be reimbursed from funds provided in the budget of the intermediate district. The intermediate council shall have the following powers and it shall be its duty:

a. To adopt bylaws and file a copy thereof with the commissioner of education.

b. To elect members of the board of education of the intermediate district as provided in section nineteen hundred fifty-two and to fill vacancies upon such board which arise because of death, resignation or otherwise for the unexpired term.

c. To approve, amend or disapprove a budget of the intermediate district as presented by the intermediate district board and if such budget is approved, to certify such approval to the intermediate board of education for collection pursuant to section nineteen hundred fifty-six of this article.

d. On the basis of the recommendations of the intermediate board of education resulting from surveys as authorized by paragraph f of section nineteen hundred fifty-two, and with the approval of the commissioner of education, to assign to or withdraw from the intermediate district board of education responsibilities other than those assigned by law.

§ 1952. **Intermediate board of education.** 1. Each intermediate district shall have a board of education of five members, each of whom shall be a qualified voter in his school district. The first such board of education shall be elected by the intermediate council at its first meeting. The members shall take office on the first of July and they shall severally continue to hold office for one, two, three, four and five years respectively thereafter. At the first annual meeting in January and each succeeding annual meeting thereafter, the intermediate council shall elect one member of the intermediate board for a full term of five years. Such member shall take office on July first next following his election. Not more than one intermediate district board member shall be selected from any one constituent school district.

2. The intermediate board of education shall have the following powers and it shall be its duty:

a. To meet for organization during the month of July on a date fixed in its bylaws at such meeting. It shall elect its officers consisting of a president, vice president, clerk and treasurer who shall be the administrative officers of the intermediate district.

b. To appoint a superintendent who shall be its executive officer and who shall perform the duties set forth hereafter and such other duties as are assigned to him. He shall be appointed for a period of five years unless removed for cause after a hearing.

c. To appoint on the recommendation of the superintendent such assistant superintendents, directors, supervisors, special teachers and other personnel as may be required to carry on the program of the intermediate district and to define the duties of each.

d. To develop a program of pupil personnel services, such as, guidance services, psychological services and health services, in the constituent districts; to provide instruction in industrial-trade education; instruction for adults and for handicapped children; to operate summer high schools; to assist principals and teachers in the improvement of instruction; to administer transportation for the intermediate district program; and to perform such other educational services as shall be assigned to it by vote of the intermediate district council and approved by the commissioner of education.

e. At the request of one or more constituent school districts within the intermediate district to supply and administer to said school district or districts educational programs and services at the expense of said school district or districts.

f. To make or cause to be made surveys of the educational needs of the intermediate district and make recommendations to the intermediate council for the improvement of the educational program.

g. To make an annual report to the intermediate council concerning the educational progress and needs within the intermediate district.

h. To present a budget for the support of the intermediate district program to the intermediate council for its approval.

i. To make to the commissioner of education such reports as he may require.

j. To enter into contractual relations with school districts and with other governmental agencies for a period not to exceed five years for the provision of any additional service assigned to the intermediate district.

k. To rent space for administrative or instructional purposes.

l. To purchase buildings, alter and make additions thereto, purchase sites or additions thereto and to construct buildings for administrative or instructional purposes in accordance with the procedures set forth in this article and to purchase necessary furniture, equipment, implements, apparatus and supplies within the appropriations made therefor.

m. To attend meetings of the intermediate council. Members of the intermediate board, however, shall not have the right to vote at such meetings.

n. Provide each district superintendent, more than half of the enrolment of whose supervisory district is included in the intermediate district, with employment as superintendent of the intermediate district, or without loss of previous tenure rights with employment as an assistant superintendent, or as a supervisor, or as a director of special services at a compensation not less than the total annual salary received by the incumbent at the time of the formation of the intermediate district.

§ 1953. **Superintendent of the intermediate district.** The superintendent of schools of the intermediate district shall have the power and it shall be his duty:

1. To enforce all provisions of law and all rules and regulations relating to the management of the affairs of the intermediate district and other educational, social and recreational activities under the direction of the board of the intermediate district, to be the chief

executive officer of such board and the intermediate district, and to have a seat in the board of the intermediate district and the right to speak on all matters before the board, but not to vote.

2. To prepare the content of each course of study assigned to the intermediate district by the intermediate council and to submit the same to the board of the intermediate district for its approval, and when thus approved, to cause such courses of study to be used in the grades, classes and schools for which they are authorized.

3. To recommend to the intermediate board text-books to be used in the schools for any courses of study under the jurisdiction of the intermediate board of education.

4. To have supervision and direction of associate, assistant and other superintendents, directors, supervisors, principals, teachers, lecturers, auditors, attendance officers, janitors together with other persons employed by the intermediate district board and engaged in the management of the affairs of the intermediate district or the other educational activities of the intermediate district authorized by this chapter and under the direction and management of the board of the intermediate district; to transfer employees of the intermediate district and to report immediately such transfers to said board for its consideration and action. To report to said board violations of regulations and cases of insubordination, and to suspend any employee of the intermediate district until the next regular meeting of the board, when all facts relating to the case shall be submitted to the board for its consideration and action.

5. To have supervision and direction over activities and interests under the management, direction and control of the board of the intermediate district.

6. To assemble all the teachers and principals employed by the school districts comprising the intermediate district for the purpose of conference, for reports of and advice and counsel in relation to pupil relationships, school management and other school work, and for promoting the general good of all the schools of the intermediate district. Teachers and principals shall be entitled to compensation for days actually in attendance upon such conference.

7. Frequently and thoroughly to inspect and supervise the work done in the classes maintained by the intermediate district and to report to the board of the intermediate district on the efficiency of the instruction given.

8. In constituent districts employing eight or more teachers, to make the recommendations for appointment, tenure and discontinuance of service required of a district superintendent under section three thousand thirteen of this chapter, except that a superintendent of schools shall continue to exercise all powers related to appointment, tenure and discontinuance.

9. To inquire from time to time into and ascertain whether the boundaries of the school districts within the intermediate district are definitely and plainly described in the records of the office of the proper town clerk; to cause to be made and filed in the education

department a record of such boundaries; and in case the record of the boundaries of any school district shall be found indefinite or defective, or if the same shall be in dispute, then to cause the same to be amended or an amended record of the boundaries to be made and filed in the office of the proper town clerk and in the education department. All necessary expenses incurred in making and filing such records and in establishing such amended records shall be a charge on the school district or districts affected, to be audited and allowed by the school authorities thereof, on the certification of the superintendent of the intermediate district.

10. To dissolve and annex any school district to another contiguous district within the intermediate district in accordance with the procedure granted a district superintendent under the provisions of section fifteen hundred five of this chapter.

11. With the written consent of the trustees of all the districts to be affected thereby, to make an order altering the boundaries of any school district within the intermediate district and fix in such order a day when the alteration shall take effect.

12. With the written consent of the board of education of a city or union free school district having a population of four thousand five hundred or more, and employing a superintendent of schools, and the written consent of the board of education or trustees of a district adjoining such union free school district, to make an order altering the boundaries of such districts, and fix in such order a day when the alteration shall take effect. If the trustees of any district affected thereby refuse to consent, the superintendent of the intermediate district may make and file with the town clerk his order making the alteration, but reciting the refusal, and directing that the order shall not take effect until a day therein to be named, and not less than three months after the date of such order. Within ten days after making and filing such order the superintendent of schools shall give at least a week's notice in writing to the boards of education of all districts affected by the proposed alterations, that at a specified time, and at a named place within the town in which one of the districts to be affected lies, he will hear the objections to the alteration. The board of education of any district to be affected by such order may request the supervisor and town clerk of each of the towns, within which such districts shall wholly or partly lie, to be associated with the superintendent of schools. At the time and place mentioned in the notice, such superintendent, with the supervisors and town clerks, if they shall attend and act, shall hear and decide the matter, and the decision shall be final unless duly appealed from. Such decision must either affirm or vacate such order, and must be filed with and recorded by the town clerk of the town in which the district to be affected shall lie, and a tie vote shall be regarded a decision for the purposes of an appeal on the merits. Upon such appeal the commissioner of education may affirm, modify or vacate the order of the superintendent of schools or the action of the local board.

13. With the written consent of the school authorities of any district adjoining an intermediate district and upon a majority vote of

the intermediate council, to make an order annexing any district contiguous to the intermediate district. Such district, when added, shall be a constituent district of the intermediate district and shall have all the rights, privileges and obligations of the other constituent districts. The members of its board shall become members of the intermediate council and it shall become obligated for its share of the expenses of the intermediate district, including bonded indebtedness, from the date of its annexation.

14. An appeal will lie to the commissioner of education by any aggrieved party pursuant to the provisions of section three hundred ten of this chapter from any acts of the superintendent of schools of the intermediate district in fixing or altering boundaries, or dissolving or consolidating school districts.

§ 1954. **Appointment of teachers and certain other employees in the intermediate district.** 1. Teachers, principals, supervisors and all other members of the teaching and supervising staff of the intermediate district except the superintendent of schools shall be appointed by a majority vote of the board of education upon recommendation of the superintendent of schools for a probationary period not to exceed three years. Services of a person so appointed to any such position may be discontinued at any time during the probationary period upon the recommendation of the superintendent by a majority vote of the board of education.

2. On or before the expiration of the probationary term the superintendent of schools shall make a written report to the board of education recommending for appointment on tenure those persons who have been found competent, efficient and satisfactory. By a majority vote, the board of education may then appoint on tenure any or all of the persons recommended by the superintendent of schools. Such persons shall hold their respective positions during good behavior and competent and efficient service and shall not be removed except for any of the following causes after a hearing by a majority vote of the board of education:

a. Insubordination, immoral character or conduct unbecoming a teacher;

b. Inefficiency, incompetency, mental or physical disability or neglect of duty.

3. All charges against a person enjoying the benefits of tenure as provided in this section shall be in writing and shall be made to the board of education. A copy shall be served upon the person charged at least ten days before the date fixed for the hearing. The person charged may appear either in person or by counsel. A record of the proceedings shall be kept and transcribed. The person charged may be suspended by the superintendent of schools until the determination of the charges by the board of education, provided, however, that such suspension shall not be for a longer period than thirty days. A hearing shall be held as follows: The board of education shall proceed to try and determine the case either in such board or by a committee of its body and shall fix the penalty or punishment, if any, to be

imposed for the offense and such penalty or punishment shall consist of a reprimand, a fine, suspension for a fixed time without pay or dismissal, provided, however, that a vote of a majority of all the members of such board shall be necessary to impose a penalty or punishment. The report of any committee holding such a trial shall be subject to final action by the board, each member of which shall before voting read the testimony and evidence in the case. The board may reject, confirm or modify the conclusions of the committee and the decisions of the board shall be final except as they may be reviewed under the provisions of this chapter. In case the principal or other officer or teacher is acquitted, he shall be restored to his position with full pay for any period of suspension. In all trials authorized by this chapter, all testimony taken shall be under oath which the president of the board of education or chairman of the committee conducting the trial or any member of the board of education is hereby authorized to administer and such president or chairman or any such member shall have the power to subpoena any witness to appear and testify before said board or committee.

a. Any person conceiving himself aggrieved may review the determination of said board either by appeal to the commissioner of education as provided by article seven of this chapter or by a proceeding under article seventy-eight of the civil practice act. If such person elect to institute such proceeding, the determination of such board shall for the purposes of such proceeding be deemed final.

§ 1955. **School sites; construction and alteration of buildings; bond issues.** Sites or additions thereto shall be designated by the board of education of the intermediate district. Such board of education shall thereupon direct the school authorities of each of the constituent districts to call special meetings of the voters of such constituent districts at a time fixed by the intermediate board for the purpose of voting an appropriation for the purpose of purchasing such property. The intermediate board shall also have the power to direct school authorities of the constituent districts to call special meetings of the voters of such constituent districts for the purpose of voting an appropriation for new school buildings for the intermediate district or additions, alterations, repairs or improvements to its sites or building or for the construction of a bus garage or for the purpose of paying any judgment or for the payment or refunding of an outstanding bonded indebtedness. Such meetings may authorize the levy of a tax in one sum or by instalments which shall be of such amounts and levied in such years as may be determined, within the authorization of the voters, by the board of education of the intermediate district. Any bonds or other evidences of indebtedness issued pursuant to the local finance law shall be obligations of the intermediate district.

§ 1956. **Levy and collection of taxes.** The intermediate district board of education, after certification of approval of its budget by the intermediate council, shall certify to the school authorities of each constituent district its proportionate share of the amount of money needed to be raised by taxes. Each constituent district's proportionate share shall be determined in accordance with the ratio which the constituent district's total full or true valuation bears to the total or full valuation of the intermediate district. The school authorities of each constituent district shall add such amount, as certified, to its own budget and levy and collect the same at the same time and in the same manner as it collects other taxes for its own use. Such moneys collected for and on behalf of the intermediate district shall be turned over by the collector as collected to the treasurer of the intermediate district.

§ 1957. **State aid.** There shall be apportioned and paid to the treasurer of each intermediate district by the commissioner of education, in the same manner and at the same time as other state aid is apportioned and paid, each of the following quotas:

1. Teacher quota. One-half, not to exceed five thousand dollars, of the salary paid each superintendent, plus one-half, not to exceed four thousand dollars on account of each, of the salary of each assistant superintendent, director and supervisor of instruction, plus one-half, not to exceed three thousand dollars for each person, of the salary of each teacher of handicapped children, adult education, industrial-trade education and other vocational or special education employed by the intermediate district in a program that the commissioner of education shall approve, shall be called a teacher quota. Where an intermediate district shall employ teachers who instruct pupils who are in full time attendance in an intermediate district school, there shall be paid to such intermediate district either the teacher quota or the equalization base provided for in subdivision a, paragraph two of section thirty-six hundred three-a of this chapter, whichever is the larger. Where pupils are in attendance in an intermediate district school for less than full time instruction but for fifteen or more periods a week, such periods to be not less than forty minutes each, the intermediate district shall receive either the teacher quota or one-half of such equalization base, whichever is the larger, and the constituent district in which such pupils are in attendance shall in the apportionment of its state aid for such pupils receive one-half of the equalization base as provided in either section thirty-six hundred three or section thirty-six hundred three-a of this chapter, whichever is applicable. In any intermediate district where the full value of real property per pupil in average daily attendance within the intermediate district is less than twenty thousand dollars, such teacher quota shall be increased by a percentage obtained by ascertaining the difference between the full value of real property per such pupil and twenty thousand dollars and dividing the resulting number by two hundred sixty-six.

2. Administrative quota. A quota equal to the amount of the approved expenditures for salaries, rents and supplies for administrative purposes, excluding salaries of professional personnel for whom aid is claimed under the teacher quota. Such quota shall not exceed an amount equal to ten per centum of the total approved expenditures of the intermediate district.

3. Special quotas. a. A transportation quota to be determined according to the formula contained in section thirty-six hundred twenty-seven of this chapter:

b. Special class quotas in accordance with the formula for special class quotas contained in subdivision two of section thirty-six hundred three-a of this chapter:

c. Summer high school quotas in accordance with the formula set forth in subdivision two of section thirty-six hundred three-a of this chapter:

d. Adult education quotas in accordance with the formula contained in subdivision two of section thirty-six hundred three-a of this chapter, provided that no claim has been made for adult education teachers as part of the teacher quota.

§ 1958. **Establishment of boards of cooperative educational services pending the creation of intermediate districts.** The school directors, boards of education and school trustees of one or more supervisory districts which are not part of an intermediate district, meeting at a time and place to be designated by the district superintendents of schools, may, by a majority vote of their members present and voting, file with the commissioner of education a petition for the establishment of a board of cooperative educational services for the purpose of carrying out a program of shared educational services in the schools of the supervisory districts and for providing instruction in such special subjects as the commissioner may approve. The commissioner, by order, may authorize the establishment of such a board.

a. Upon the authorization by the commissioner of the establishment of such a board, the school directors, members of boards of education and school trustees, by a majority vote of those present and voting, shall elect a board of cooperative educational services consisting of five members. These shall serve for five years, except that members of the first such board shall be elected for such terms that the term of one member shall expire each year, and their successors shall be elected for a full term of five years. Members of such board shall be reimbursed for necessary expenses for attending meetings of such boards. The district superintendent shall be the executive officers of the board, and where a board of cooperative educational services comprises two or more supervisory districts the district superintendents, together with the president of the board of cooperative educational services, shall act as an executive committee.

b. The boards of cooperative educational services in any two or more contiguous supervisory districts may cooperate in the provision of educational services. In such cases, the district superintendents of the respective supervisory districts shall serve as an executive committee to carry out the decision of the board of cooperative educational services in their respective districts.

c. The board of cooperative educational services shall have the power and duty to:

1. Make or cause to be made surveys to determine the need for cooperative educational services in the supervisory district and present the findings of their surveys to local school authorities.

2. At the request of local districts, and with the approval of the commissioner of education, provide any of the following services on a cooperative basis; school nurse teacher; attendance supervisor; dental hygienist; teachers of art, music, physical education, vocational agriculture and vocational homemaking; guidance counselors; and such other services as the commissioner of education may approve.

3. Upon the recommendation of the district superintendent, employ teachers, supervisors, clerical help and all other personnel necessary to carry out its program.

4. Receive all reimbursements from public funds on account of the cooperative educational services performed under its jurisdiction, and allocate the costs of cooperative educational activities and shared services including administrative and clerical costs against the local school districts under the terms arranged by itself and local boards of education and school trustees, and receive and disburse the same.

5. Borrow money in anticipation of revenue due the board of cooperative educational services.

6. Arrange cooperative educational services with and if necessary make contracts covering same with other public agencies for shared services.

7. Make such reports as are required by the commissioner of education.

8. Appoint one of its members as president, one of its members or another qualified voter in the district within the supervisory district as clerk and another qualified voter in a district within the supervisory district as treasurer. The duties of the clerk and treasurer shall be the same as those established by statute and regulations of the commissioner of education for clerks and treasurers of union free school districts.

9. Designate a bank or banks for the deposit of money, and the approval and authorization of expenditures shall be in accordance with the procedures that now apply to union free school districts.

10. Fill any vacancy which may occur in said board by reason of death, resignation, removal from office or from the school district or refusal to serve, of any member or officer of said board; and the person so appointed in the place of any such member of the board shall hold office until the next annual meeting of the board of cooperative educational services.

11. At the request of officials of school districts, created by legislative act, within the territory of a board of cooperative educational services, provide services as outlined in paragraph two of this subdivision. For such districts, there shall be apportioned from state funds to the board of cooperative educational services a sum equal to one-half the total cost of the approved services provided to such school district.

12. In those counties where taxes other than those on real property are applied to school purposes, the tax rate shall be deemed to be that which would result if such taxes had not been applied to school purposes.

13. A meeting of the school directors, boards of education and school trustees of the component districts shall take place on the third Thursday in July in each year at a place and hour designated by the board of cooperative educational services for the purpose of electing members of the board of cooperative educational services.

d. Upon application by a board of cooperative educational services, there shall be apportioned and paid from state funds to each board of cooperative educational services an amount which shall be the sum of the amounts determined for each local district by deducting from the cost of services an amount which shall be the proportion of such cost that four mills bears to the tax rate of the local district computed upon the actual valuation of taxable property expressed in mills to the nearest tenth as determined by the commissioner of education. The cost of services herein referred to shall be the amount allocated to each local school district by the board of cooperative educational services to defray expenses of such board, except that that part of the salary paid any teacher, supervisor or other employee of the board of cooperative educational services which is in excess of six thousand dollars shall not be an approved expense for purposes of this computation and except also that administrative and clerical expenses shall not exceed ten per cent of the total expenses for purposes of this computation. The "tax rate" as herein referred to shall not include a special tax levied for debt service in an existing district of a central school district or a consolidated district. The "four mills" herein referred to shall be increased to five mills in determining the amount of state aid to be apportioned in the year nineteen hundred fifty-fifty-one; six mills in nineteen hundred fifty-one-fifty-two; and thereafter; provided further that nothing in this act shall prevent school districts with the approval of the commissioner of education from providing cooperative educational services for which no application for state aid is to be made. In the event that such board of cooperative educational services shall be discontinued, the state aid herein authorized shall be distributed to the component districts in the amounts which accrue to the board of cooperative educational services because of their participation. In the event that the component districts become part of an intermediate unit, the state aid shall thereupon be paid to the intermediate unit and credited against any apportionment to which such intermediate unit may be otherwise entitled during the first year of operation.

e. The board of cooperative educational services is hereby created a body corporate. All property which is now vested in, or shall hereafter be transferred to the board of cooperative educational services, shall be held by them as a corporation.

§ 3. This act shall take effect immediately.

APPENDIX B. Conferences

During January and February, 1964, seven conferences were held in the sponsoring districts, to explore the feasibility of a regional center and how it would -- or could -- operate in specified areas. Summations of those conferences follow:

1. LIBRARY FACILITIES AND SERVICES

Convened January 17, 1964, at Lynbrook, New York
Chairman: Dr. Edward J. Murphy, Superintendent, Lynbrook Public Schools

Consultants:

Mr. Lee Campion, State Education Department, Albany, New York
Miss Peggy A. Sullivan, Knapp School Library Project, Chicago, Illinois
Mr. John Farley, Director of Teacher Library Training, Queens College, New York
Mr. A. Louis Morse, Director of Libraries, East Meadow Public Schools, Long Island, New York
Mr. Roger Jones, Librarian, Lynbrook Public Library, New York

Participants:

Mr. Jack Tanzman, Principal Investigator

Plainview Public Schools-	Dr. William Nelligan
	Mrs. Julia Hartmann
	Mrs. Ruth Schwartz
	Mr. David Cohen
Farmingdale Public Schools-	Miss Roberta Everitt
	Mr. Geoffrey Mattocks
	Mr. Stanley Saltzman
Jericho Public Schools-	Mrs. Helen Mirer
	Mr. Carl Renfro
	Mr. Harvey Bimberg
	Mr. George Jackson
	Mrs. Anna Stabler
Bethpage Public Schools-	Mrs. Evelyn Gibson
	Mrs. Gladys Tufts
Syosset Public Schools-	Dr. Howard V. Merideth
	Miss Mabel Berry
Glen Cove Public Schools-	Miss Justine M. Dosch
	Mr. Harold J. Donohue

Participants (cont'd.):

Lynbrook Public Schools-	Dr. Edward J. Murphy Mrs. Bernadine Klein Miss Ronnie Stein Miss Marjorie Austin Mrs. Roseann Waldstin Miss Mabel Buckwalter Mrs. Lois Crabill Mrs. Beatrice Frank Mrs. Carolyn Szabo Mr. William K. Pearsall

Participants in this conference were asked to consider several questions, among them: What library services should be available in each school: Should these services include extra library materials? What materials and services should be shared by school district libraries? What role should data processing and automation play in the development of the modern school library?

Most conference participants felt that there was a great deal of improvement possible for local school libraries, that more materials and mechanical devices could be purchased and used in local libraries. The consensus seemed to be that there were many services that could be shared by libraries and an establishment of a regional center would make this possible. For example, the group felt that a large professional library was essential and would contribute to the better training of all teachers in the area. It was agreed that there ought to be a place where libraries could borrow and share microfilm editions of periodicals. These microfilms would obviate the need for the storing of periodicals from year to year in each individual library.

Pictures or collections could be circulated through a central source. Data processing and computors might be used in a central area at per unit or per school costs which would not be prohibitive when shared. Research could be done in a centralized place as well as the study of reading habits of students, the selection of books and the development of library study habits. Audio-visual filmstrips, motion pictures and kinescopes could be shared by all schools.

2. PSYCHOLOGICAL AND GUIDANCE SERVICES
Convened January 24, 1964, at Glen Cove, New York
Chairman: Dr. Louis A. Rosasco, Acting Superintendent, Glen Cove Public Schools

Consultants:

Dr. Gilbert Trachtman, School of Psychology, New York University, New York
Dr. Julia Vane, Hofstra University, Long Island
Dr. O. Bernard Leibman, Queens College, New York
Dr. Victor Elkin, Long Beach Public Schools, Long Island, New York
Dr. Charles Sukman, Levittown Public Schools, Long Island, New York
Dr. Raymond Patoillet, Columbia University, New York
Dr. Lucy Davis, Bucks County Public Schools, Pennsylvania
Dr. Henry Ray, Centennial School District, Johnsville, Pennsylvania
Dr. Bruce Shear, New York State Education Department, Albany, New York

Participants:

Mr. Jack Tanzman, Principal Investigator

Bethpage Public Schools-	Mr. Lawrence Bolter
	Mr. George Cobelli
	Mrs. Esta Holtzman
Syosset Public Schools-	Mr. Edward Augustine
	Dr. Gerald Palter
Jericho Public Schools-	Mr. Robert Smilon
	Miss Marion Levine
	Mrs. Barbara Rumrill
	Dr. Leon Westfall
Lynbrook Public Schools-	Mr. Seymour Guiberg
	Mr. Lawrence Silberglied
Plainview Public Schools-	Dr. Ellen Tracey
	Miss Ellen Casey
	Mr. Leonard Berkowitz
	Mr. Milton Handler
	Mr. Sam Scott
	Mr. Joseph Bruzzese
	Miss Mary Fleming
	Mr. James McKenna
Glen Cove Public Schools-	Mr. Harold Donohue
	Mrs. Isabel Klein
	Mrs. Elizabeth Reichardt
	Mr. Sayles Clark

Participants (cont'd.):

Farmingdale Public Schools- Dr. Albert Meyerstein
Dr. Nicholas Massa
Dr. Alexander Antwarg
Dr. Joel Kelberg
Mr. Benjamin Schwartz
Mr. John McHale
Mr. Preston Corsa
Mr. Guido Valentine
Mr. William Honnen
Miss Thelma Utzman

In terms of psychological and guidance services, it was agreed that a regional center could not take over these functions for the local districts. Direct guidance would have to be handled on a more personel level and the center would tend to become too remote.

The conference did, however, identify four areas in which a regional center might very well operate. These were:

1. As liaison between the schools and other social, welfare and law enforcement agencies in the area.

2. To supply specialized talents -- specialists able to operate in areas beyond the responsibility of the district counselor or psychologist.

3. As a research center.

4. To provide in-service training to guidance personnel and psychologists in the local districts and -- more likely -- to teachers and administrators.

3. EDUCATIONAL RESEARCH AND DEVELOPMENT

Convened January 27, 1964, at Jericho, New York
Chairman: Dr. Thomas F. Carey, Superintendent, Jericho Public Schools

Consultants:

Dr. Henry Brickell, Assistant Superintendent, Manhasset, New York
Mr. Robert Chisholm, Research Fellow, Teachers College, Columbia, New York
Mr. Kenneth Dunn, Director, Nassau School Development Council, Long Island, New York
Dr. Donald Mitchell, Executive Secretary, New England School Development Council, Boston, Massachusetts

Participants:

Mr. Jack Tanzman, Principal Investigator

Plainview Public Schools-	Dr. Carl Winston
	Dr. Martin Bregman
	Miss Lillian Glogau
	Mr. Leonard Kramer
	Mr. Herbert Levine
	Mr. Charles Harwood
Lynbrook Public Schools-	Mr. Clarence Day
	Mr. J. Ray Johnson
Bethpage Public Schools-	Mr. Milton Meiskin
	Mr. Louis Vetri
Farmingdale Public Schools-	Mr. Jack Abramowitz
	Mr. Joseph Goergen
	Mr. Harold Switts
	Mrs. Rosalie Samuels
	Miss Barbara Gilles
Jericho Public Schools-	Mr. Edmond Tanzi

It was agreed that educational research and development was an ideal area for cooperation among districts. One participant pointed out that a consultant hired to work with a single district on a problem could as easily -- and for virtually the same cost -- work with five, six or more districts. By pooling each district's individual (and small) resources for research, a sizeable and useful research fund could be developed.

It was also felt that the very fact of having larger numbers of students, teachers and situations with which to work would have to contribute to better research.

It was finally suggested that a central research and development group should be charged with collecting research done around the nation -- research that often never gets beyond the psychological and other journals -- and disseminating it to the participating districts, quite possibly with notations on lessons to be learned and methods for implementation.

4. CONTINUING EDUCATION

Convened January 31, 1964, at Bethpage, New York
Chairman: Dr. Charles H. Bryan, Superintendent, Bethpage Public Schools

Consultants:

Dr. Eli Cohen, Executive Secretary, National Committee on Employment of Youth
Mr. R. Guy Foster, Associate, New York State Education Department Occupational Extension and Industrial Services, Albany, New York
Mr. Herbert W. Lehmann, Director of Work Study Projects, Chicago Public Schools, Illinois
Dr. Herman Slotkin, Coordinator, Drop-out Experiments, New York City Public Schools

Participants:

Mr. Jack Tanzman, Principal Investigator

Bethpage Public Schools- Mr. Frank Leahy
Mr. Francis Russo
Mr. George Cobelli
Mr. Donald Kant

At the outset, two conclusions were reached. First, it was agreed that continuing education is a problem of the schools. Second, that a regional center could make a very great contribution in this area.

The conference identified seven ways in which a regional center could help identify problems in continuing education. They were:

1. Carry on a continuing research program in order to determine the community needs.

2. Be a clearing house for information such as new courses developed in special areas, employment needs, governmental grants, etc.

3. Carry on experimental programs.

4. Communicate pertinent information by mass communication media.

5. Have the responsibility of coordinating programs in order that small districts may have the same advantages as large cities.

6. Have facilities to train some specialized personnel for the districts.

7. Be responsible for promoting, creating interests in educational programs.

Uses of the communications center included:

1. Research various problems proposed by the area.
2. Use of media to disseminate career and vocational information to community, schools and industry.
3. A center to focus upon coordinating various training programs now available and to introduce training programs as the need is demonstrated.
4. Experimentation and development of curriculum in special areas.
5. A central area with latest information concerning manpower available and manpower needs.
6. A center where vocational counseling would be available to supplement those services in the home schools.
7. Training of teachers to meet new demands by means of media, demonstration and pilot studies.
8. The housing of a professional library.
9. A center where all available research would be pulled together.
10. A center where new tools (machinery, texts, etc.) would be tried on an experimental basis. If proven successful the home schools would then purchase.

5. IN-SERVICE EDUCATION OF TEACHERS

Convened February 4, 1964, at Plainview, New York
Chairman: Dr. Robert F. Savitt, Superintendent, Plainview-Old Bethpage Public Schools

Consultants:

Dr. John Clifton Moffitt (Keynote Speaker), Superintendent, Provo City Schools, Utah
Dr. Walter Anderson, Dean, School of Education, New York University, New York
Dr. Donald T. Donley, Director, Center for Field Services; Executive Director, Capital Area School Development Association, SUNY, Albany, New York

Participants:

Mr. Jack Tanzman, Principal Investigator

Bethpage Public Schools-	Mr. Joseph Pitts Dr. James Lawson
Farmingdale Public Schools-	Mr. Hamilton Blum Mr. Daniel Burns Mrs. Mary Forbes Mr. John Grindle Mr. Harold E. Switts
Glen Cove Public Schools-	Mr. Thomas Kernan Miss Margaret Lyons Mrs. Catherine Miller Mr. James Moore
Jericho Public Schools-	Mrs. Barbara Rumrill Mr. Edmond Tanzi
Lynbrook Public Schools-	Mr. Thomas Heath Mr. Victor Miller
Plainview Public Schools-	Dr. William J. Nelligan Dr. Daniel Healy Mr. George Gould Mr. Charles Harwood Mr. William DeGennaro Mr. Arthur Bunce Mr. Fred Karpman Mr. Marvin Witte

It was the thinking of the group that a successful in-service education program should be started about the time the individual becomes a student-teacher and should continue throughout his professional career. In carrying out this objective, a resource center would cooperate closely with both the state education department and the universities. Greater interaction could be brought about to acquire more economical ways of carrying on research projects which would have direct value for all cooperating districts. Involvement of business and industry in the area is more likely to occur regionally. There would be a unity of purpose in establishing programs for business and vocational courses. This could be continually examined and programs for training teachers in the district could be implemented. There would be a utilization of staff and resources for curriculum development which -- if carried out jointly -- could be more successful and probably better done than on a single-district basis.

6. DATA PROCESSING
Convened February 14, 1964, at Farmingdale, New York
Chairman: Dr. Thomas W. Guilford, Superintendent, Farmingdale Public Schools

Consultants:

Mr. G. Ernest Anderson, Jr., Educational Data Processing Consultant, Wayland, Massachusetts
Dr. James Friet, Eastern Region - I.B.M., White Plains, New York
Mr. Norman P. Kerewsky, Applied Systems, Inc., River Edge, New Jersey
Mr. Stanley R. Patton, Director, Bureau of Data Processing, Chicago Public Schools, Illinois
Mr. Rex L. Wood, Director of Administration, Oakland County Schools Service Center, Pontiac, Michigan

Participants:

Mr. Jack Tanzman, Principal Investigator

Farmingdale Public Schools-
Dr. Philip Acinapuro
Mr. Emmett Donnelly
Miss Genevieve Douglass
Miss Roberta Everitt
Mr. George Forbes
Mr. Robert Hess
Mr. William Honnen
Dr. William A. Kinzler
Mr. William T. Kopp
Mrs. Jane Ketkiewicz
Mr. Charles L. Manso
Mr. Geoffrey Mattocks
Mr. John McHale
Mr. Robert Mulvaney
Mr. Edward P. Powers
Mr. Laurence Roberts
Mr. Clinton Spahr
Mrs. Lillian Sullivan
Mr. Harold E. Switts
Mr. Guido Valentine
Mrs. Florence Van Nostrand
Mr. J. Richard Zutt

Glen Cove Public Schools-
Miss Justine Dosch
Miss Helen DuBois
Dr. C. J. Marino

Lynbrook Public Schools-
Mr. Walter H. Hawthorne
Mr. Richard P. McLean

Participants (cont'd.):

Plainview Public Schools-	Mr. Thomas Grill Mr. Michael Murphy Dr. Vincent J. Ribaudo Mr. Frederick R. Schmitt
Bethpage Public Schools-	Mr. Edward Lavin Mr. Frank Sabatella
Syosset Public Schools-	Mrs. Lilliam Popham
New York State Education Department-	Mr. William Ryan

There was total agreement that a regional center would be the best -- and perhaps only -- way that complete data processing facilities could be made available to all the individual districts.

It was agreed that any data processing equipment should be purchased as part of a system designed to meet the specific needs of the schools in the region. "This isn't just buying a '1401' because it sounds good," said a participant, "it means getting the equipment that will do the job you want done."

Two areas of operation were immediately pointed out -- routine records (report cards, attendance, budgets, schedules), and research. It was also suggested that the equipment might be used as training equipment for high school students or young adults interested in learning the intricacies of data processing as a possible career.

7. CURRICULUM DEVELOPMENT

Convened February 27, 1964, at Plainview, New York

Chairman: Dr. Robert F. Savitt, Superintendent, Plainview-Old Bethpage Public Schools

Consultants:

Mr. Kenneth Dunn, Director, Nassau School Development Council, Long Island, New York

Mr. Marshall McLuhan, Director, Centre for Culture and Technology, University of Toronto, Canada

Dr. Ira Singer, Director of Curriculum Research, Board of Cooperative Educational Services, Buffalo, New York

Participants:

Mr. Jack Tanzman, Principal Investigator

Mr. Lee Campion, New York State Education Department

Bethpage Public Schools-	Mr. Lee Aschenbrenner
	Dr. James Lawson
	Mr. Anthony Mattaliano
Farmingdale Public Schools-	Dr. Jack Abramowitz
	Mr. Charles Manso
Glen Cove Public Schools-	Mr. Andrew Bongiorno
	Mr. Harold Donohue
	Mr. Thomas Kernan
	Dr. John Regan
	Dr. Louis Rosasco
Jericho Public Schools-	Dr. Thomas Carey
	Mrs. Barbara Rumrill
	Mr. Edmond Tanzi
Lynbrook Public Schools-	Mr. Donald Cosgrove
	Dr. Edward Murphy
Syosset Public Schools-	Mrs. Lorraine Geary
	Dr. Howard Merideth
	Mr. Howard Pierson
Plainview Public Schools-	Mr. John Brooks
	Mr. Vincent Cantwell
	Dr. Frank Dufay
	Mr. Murray Fessel
	Dr. William Goldstein

Plainview Public Schools- (cont'd.)	Mr. George Gould Mr. Leonard Kramer Mrs. Irma Miller Dr. William J. Nelligan Mr. Alan Vorwald

It was agreed that regional centers could provide for curriculum development (and in-service work as an adjunct thereto) more effectively and at a more reasonable pro-rated cost than could a single district.

There seemed to be general agreement that such a regional center should be staffed with a director, a professional in the area of general curriculum, some highly competent secretaries, and professional and technical people (rather than educators) to handle the technological media.

Some participants felt that one or two specialists in curriculum -- e.g., science and math -- might be advantageous to serve as core personnel in the center, but the majority agreed that task forces assembled for particular jobs was a preferable way to engage personnel beyond the skeletal permanent force noted above.

The group stressed the interrelationship of curriculum development with many of the services such as educational television, in-service education, library resource center, etc. It was felt that each of these had a part to play in undergirding and implementing curriculum development.

Such a regional communications center would probably supplement and complement rather than supersede a district's curriculum and in-service programs.

APPENDIX C. Case Studies

Specific outstanding examples of facilities and services were observed during the principal investigator's visitations. A number of these, it was felt, might by themselves serve as prototypes for districts interested in getting started on cooperative services on a limited basis. Case studies of these selected installations and services follow.

EDUCATION CENTRE LIBRARY, TORONTO, CANADA

Books	20,000
Periodicals (Received regularly)	2,500
Microfilm Titles	400

Capital Outlay for Equipment and Furniture	$ 50,000.00

Annual Budget

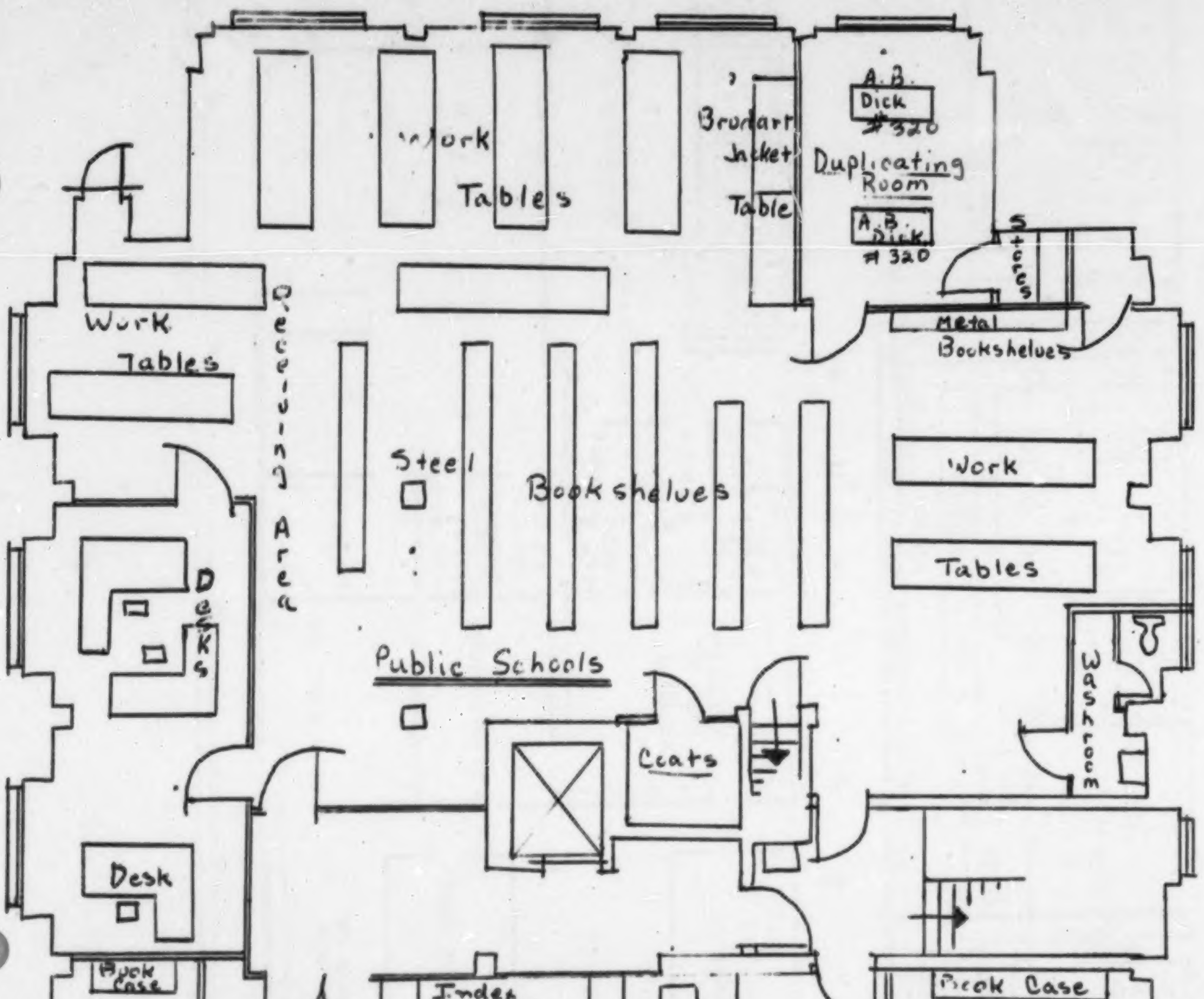
Books	$ 50,000.00
Supplies	$ 100,000.00
Salaries	$ 234,675.00
Total	$ 384,675.00

STAFF:

Chief Librarian	$ 15,000.00	
Head, Reference & Circulation	7,000 - 8,950	($9,200 -11,100 now proposed)
Four Reference Librarians	5,100 - 6,550	($5,400 - 9,000 " ")
Head, Technical Services	7,000 - 8,950	(9,200 - 11,100 " ")
Three Cataloguers	5,100 - 6,550	(5,400 - 9,000 " ")
Head, Documentation	7,000 - 8,950	(9,200 - 11,100 " ")
Two writers	5,100 - 6.550	(5,400 - 9,000 " ")
Head, Public School Library Section	7,000 - 8,950	(9,200 - 11,100 " ")
One Librarian	5,100 - 6,550	(5,400 - 9,000 " ")
Head, Secondary School Library Processing Centre	7,000 - 8,950	(9,200 - 11,100 " ")
One Librarian	5,100 - 6,550	(5,400 - 9,000 " ")

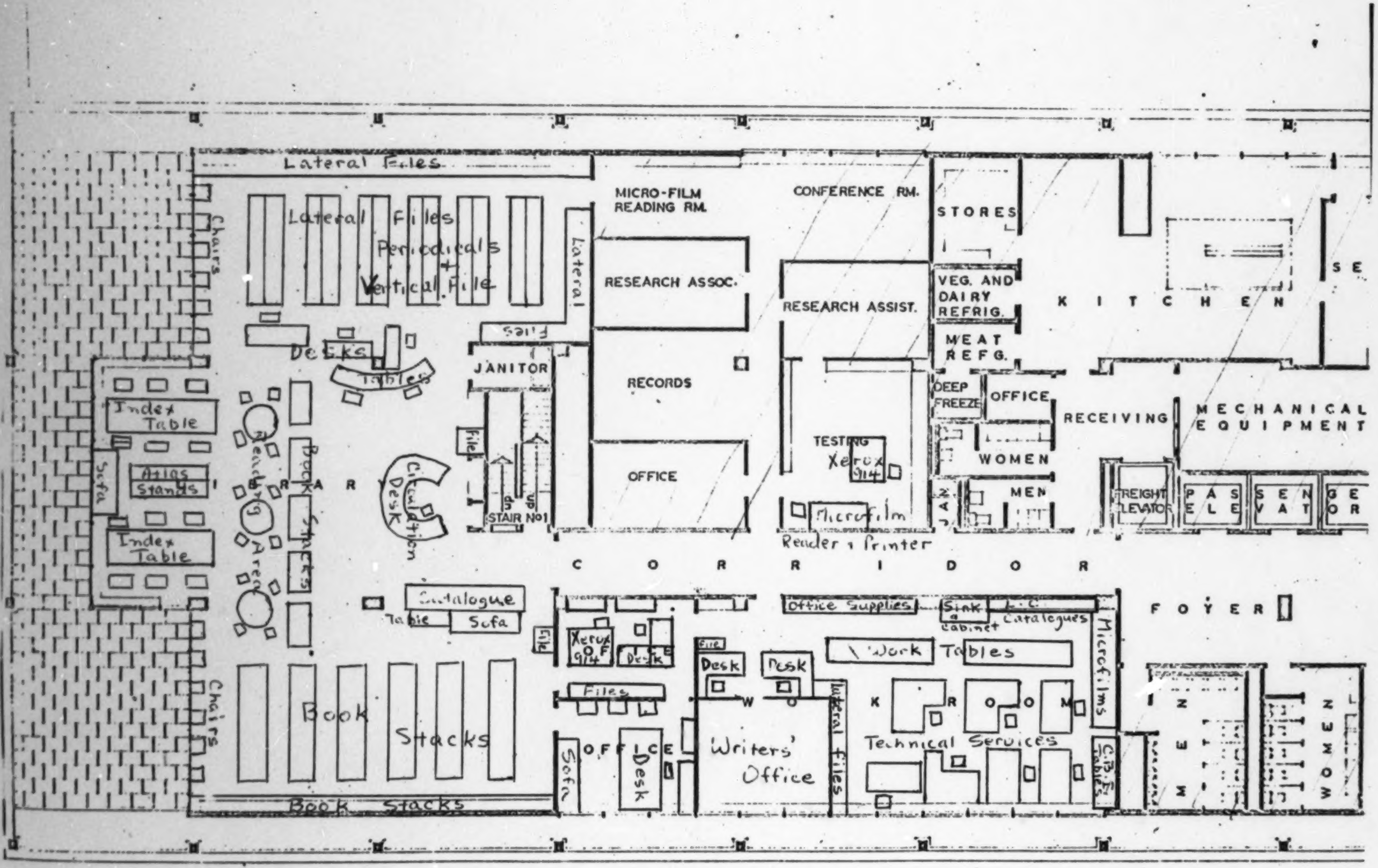
EDUCATION CENTRE LIBRARY, TORONTO, CANADA (cont.)

Clerk, Grade V (1)	$ 4,400 - 5,450
Grade IV (2)	4,000 - 4,900
Grade III (3)	3,500 - 4,500
Grade II	3,000 - 4,000
Per Diem processing and clerical staff (15)	$ 12.30 (per day)


Work Tables
Brodart Jacket Table
A.B. Dick #320
Duplicating Room
A.B. Dick #320
Stores
Metal Bookshelves
Work Tables
Receiving Area
Steel Bookshelves
Work Tables
Desks
Public Schools
Coats
Washroom
Desk
Book Case
Index Table
Book Case
Desk
Secondary Schools
Steel Bookshelves
Desk
Desk
Book Case
Desk
Book Case
Desks
Stores

5th FLOOR PLAN

CATALOGUING & PROCESSING CENTRE
TORONTO, CANADA


Lateral Files
Chairs
Lateral Files
Periodicals + Vertical File
Lateral
Files
Desks
Tables
Index Table
Atlas Stands
Sofa
Index Table
Reading Area
LIBRARY
Book Stacks
Circulation Desk
Catalogue
Table
Sofa
Book Stacks
Book Stacks
Chairs
JANITOR
File
STAIR No1
UP
dn
MICRO-FILM READING RM.
RESEARCH ASSOC.
RECORDS
OFFICE
CONFERENCE RM.
RESEARCH ASSIST.
TESTING
Xerox 914
Microfilm Reader + Printer
STORES
VEG. AND DAIRY REFRIG.
MEAT REFG.
DEEP FREEZE
OFFICE
WOMEN
MEN
JAN.
KITCHEN
RECEIVING
MECHANICAL EQUIPMENT
FREIGHT ELEVATOR
PASSENGER ELEVATOR
SE
CORRIDOR
FOYER
File
Xerox 914
OFFICE
Desk
Files
Sofa
Desk
File
Desk
Desk
Writers' Office
lateral files
Office Supplies
Sink + cabinet
L.C. Catalogues
Work Tables
WORK ROOM
Technical Services
Microfilms
C.B.E. Tables
MEN
WOMEN

SEVENTH FLOOR PLAN

Resource Centre

TORONTO, CANADA

AUDIO-VISUAL SERVICE, SAN DIEGO COUNTY, CALIFORNIA

STAFF ORGANIZATION

See attached chart

MATERIALS INVENTORY (6/15/63)

Motion Pictures	2,809 Titles	9,952 Copies
Filmstrips	2,785 "	11,212 "
Study Prints	174 "	902 "
Art Prints	680 "	925 "
Records	653 "	3,644 "
Tape Recordings	2,213 "	3,698 "
Exhibits, Dioramas, Kits	33 "	149 "

OTHER RELATED SERVICES

1. Graphics
2. Photography
3. Technical Services
4. Transportation Services

EXPENDITURES (1962-1963)

Salaries - 42.3%	Professional	$ 36,384.00
	Clerical	94,342.00
	Total	$130,726.00
Operating Expenses - 3.5%	Travel	$ 102.17
	"	120.00
	"	151.37
	Publications	2,552.00
	Operating Expenses	8,049.12
		$ 10,974.66

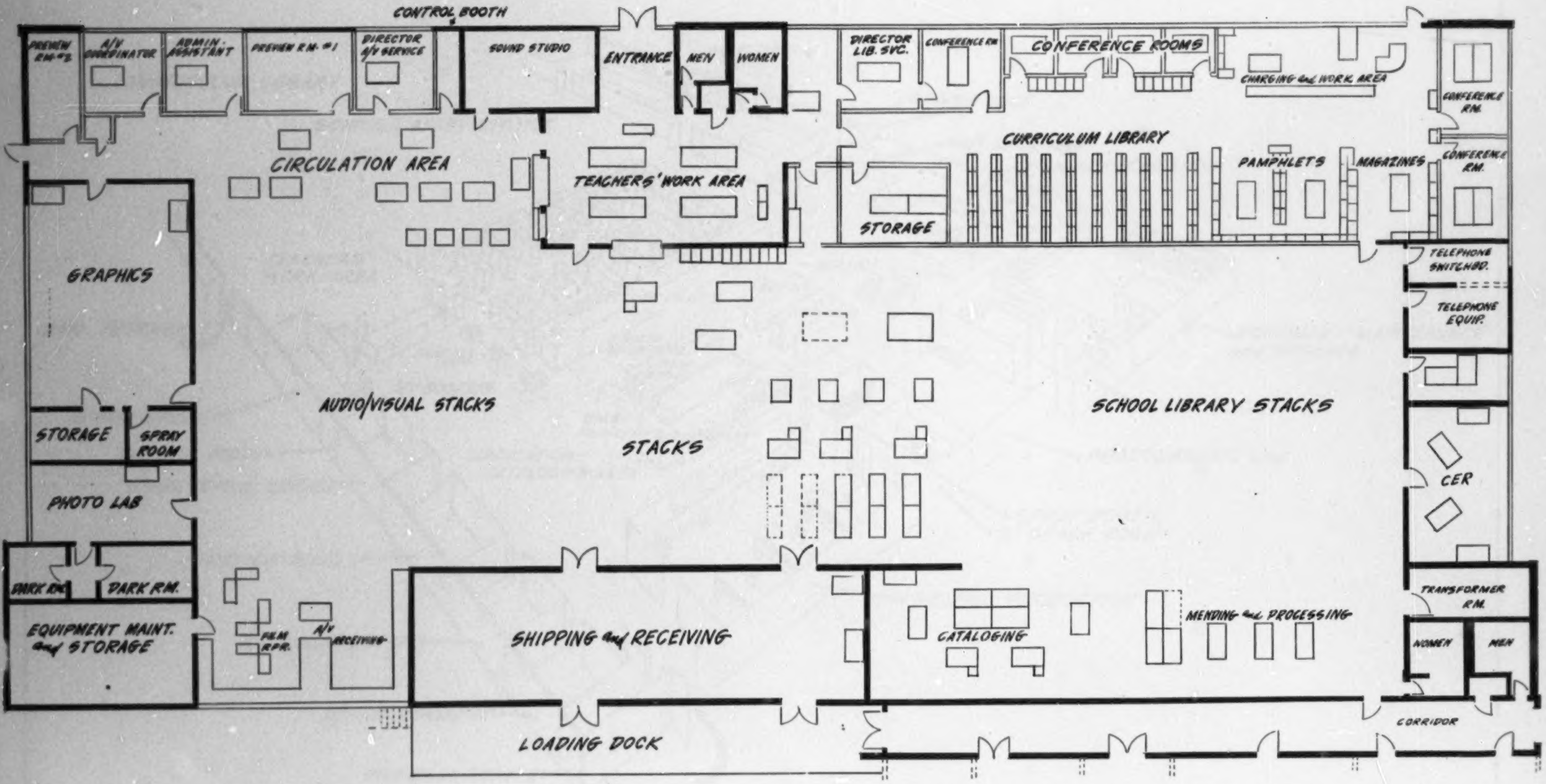
AUDIO-VISUAL SERVICE, SAN DIEGO COUNTY, CALIF. (cont.)

Equipment - 2.3%		$ 2,960.65
		4,089.60
	Total	$ 7,050.60
Materials - 51.8%		$118,170.25
		8,699.88
		14,669.06
NDEA $43,492.36		13,045.76
Federal (Part) $21,746.18		7,077.66
	Total	$161,662.61

GRAND TOTAL................$310,413.52

Income Sources

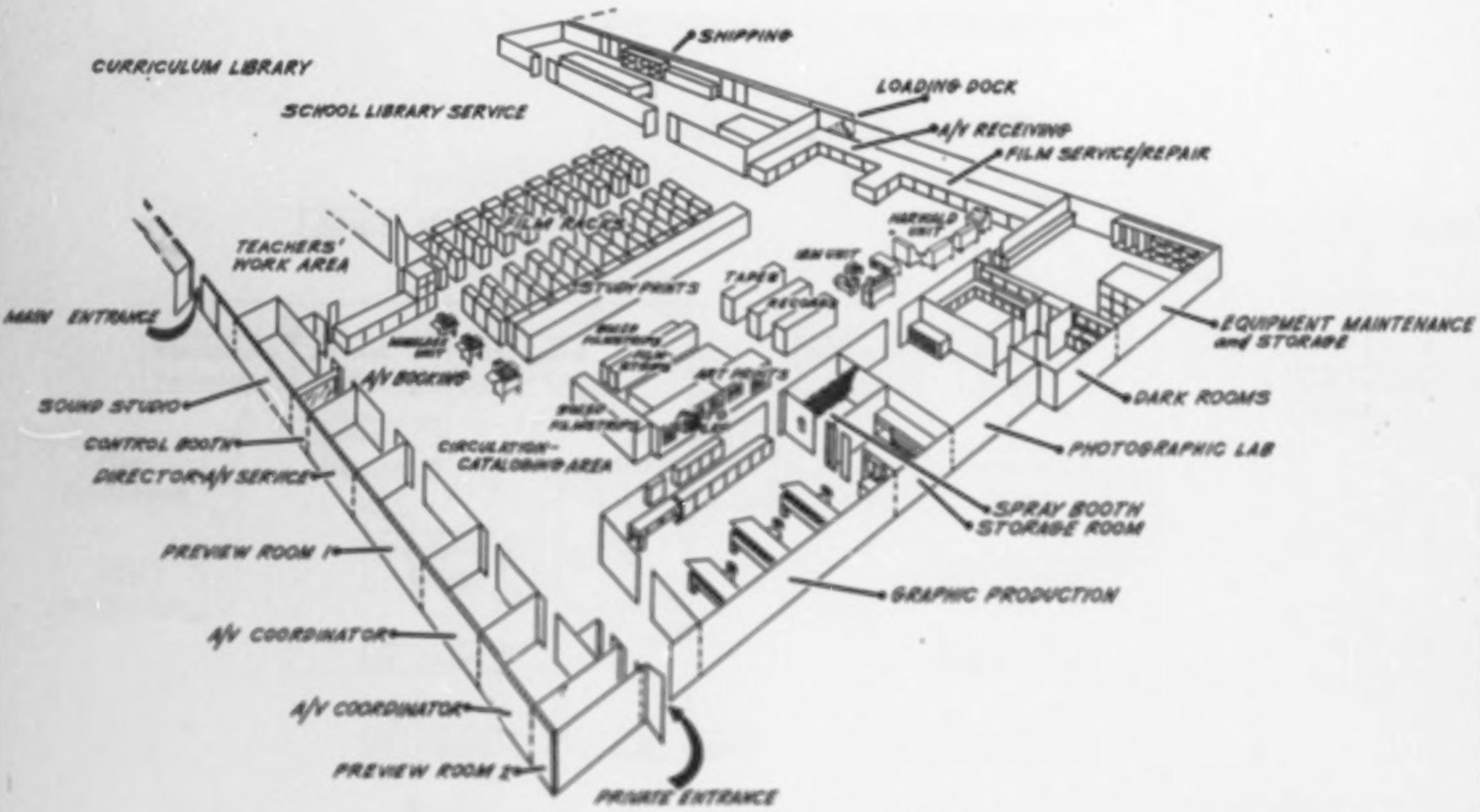
Local School Contracts	45%
Federal	7%
County School Service Fund	48%


CONTROL BOOTH
PREVIEW RM. #2
A/V COORDINATOR
ADMIN. ASSISTANT
PREVIEW RM. #1
DIRECTOR A/V SERVICE
SOUND STUDIO
ENTRANCE
MEN
WOMEN
DIRECTOR LIB. SVC.
CONFERENCE RM
CONFERENCE ROOMS
CHARGING and WORK AREA
CONFERENCE RM.
CONFERENCE RM.
CIRCULATION AREA
TEACHERS' WORK AREA
STORAGE
CURRICULUM LIBRARY
PAMPHLETS
MAGAZINES
TELEPHONE SWITCHBD.
TELEPHONE EQUIP.
GRAPHICS
AUDIO/VISUAL STACKS
STACKS
SCHOOL LIBRARY STACKS
CER
STORAGE
SPRAY ROOM
PHOTO LAB
DARK RM.
DARK RM.
EQUIPMENT MAINT. and STORAGE
FILM RPR.
A/V RECEIVING
SHIPPING and RECEIVING
CATALOGING
MENDING and PROCESSING
TRANSFORMER RM.
WOMEN
MEN
CORRIDOR
LOADING DOCK

furniture and floor plan

audio/visual and library building
DEPARTMENT OF EDUCATION
SAN DIEGO COUNTY, CALIFORNIA

Scale: 1/8" = 1'

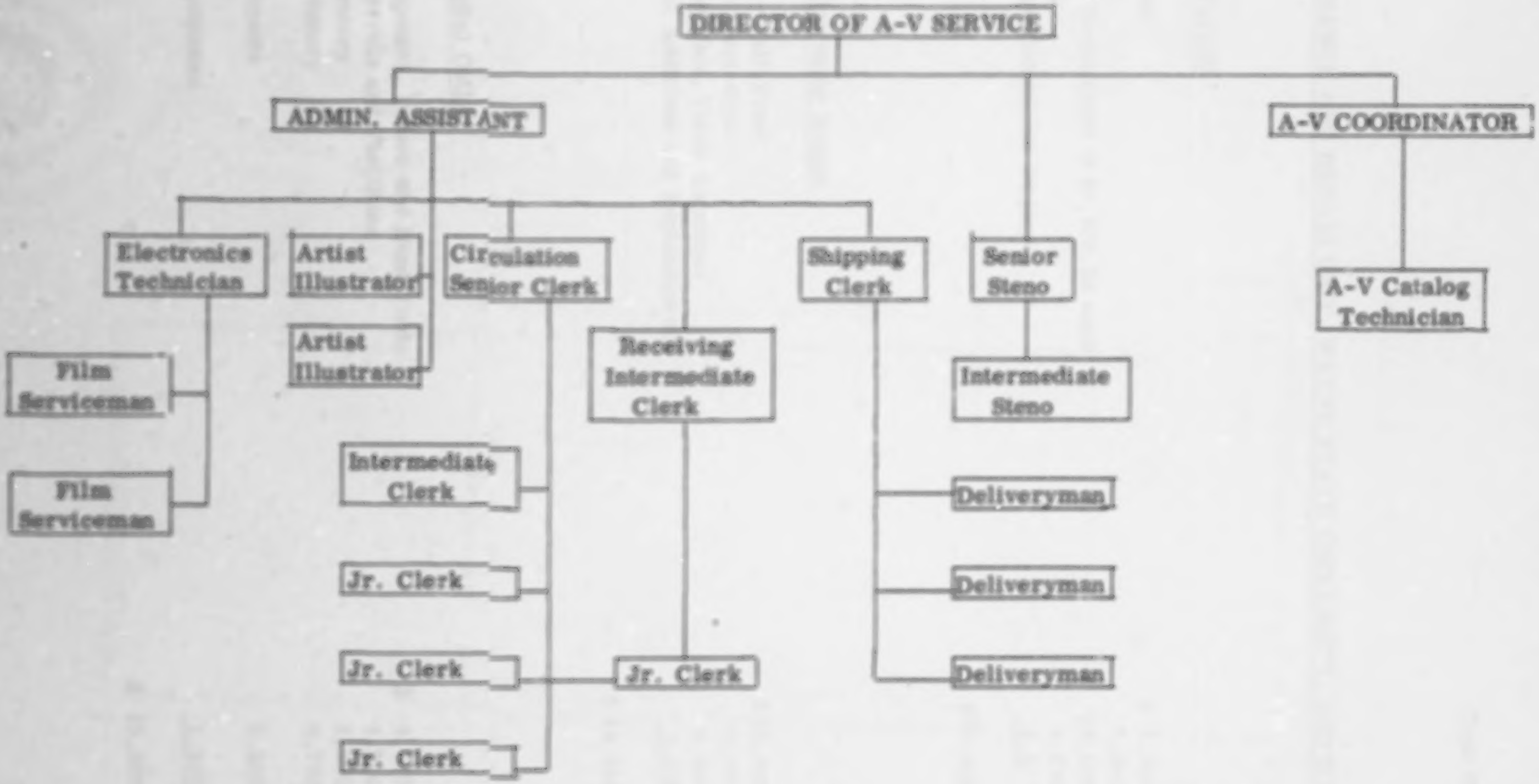

SHIPPING
CURRICULUM LIBRARY
LOADING DOCK
SCHOOL LIBRARY SERVICE
A/V RECEIVING
FILM SERVICE/REPAIR
FILM RACKS
HARWALD UNIT
TEACHERS' WORK AREA
IBM UNIT
TAPES
RECORDS
STUDY PRINTS
MAIN ENTRANCE
EQUIPMENT MAINTENANCE and STORAGE
FILM STRIPS
ART PRINTS
A/V BOOKING
SOUND STUDIO
DARK ROOMS
CONTROL BOOTH
CIRCULATION-CATALOGING AREA
PHOTOGRAPHIC LAB
DIRECTOR A/V SERVICE
SPRAY BOOTH
STORAGE ROOM
PREVIEW ROOM 1
GRAPHIC PRODUCTION
A/V COORDINATOR
A/V COORDINATOR
PREVIEW ROOM 2
PRIVATE ENTRANCE

AUDIO/VISUAL FACILITIES

Dept. of Education • San Diego County, California

DEPARTMENT OF EDUCATION - SAN DIEGO COUNTY

AUDIOVISUAL SERVICE STAFF ORGANIZATION


DIRECTOR OF A-V SERVICE
ADMIN. ASSISTANT
A-V COORDINATOR
Electronics Technician
Artist Illustrator
Artist Illustrator
Circulation Senior Clerk
Receiving Intermediate Clerk
Shipping Clerk
Senior Steno
Intermediate Steno
A-V Catalog Technician
Film Serviceman
Film Serviceman
Intermediate Clerk
Jr. Clerk
Jr. Clerk
Jr. Clerk
Jr. Clerk
Deliveryman
Deliveryman
Deliveryman

MAINTENANCE AND REPAIR UNIT, WAYNE STATE UNIVERSITY, DETROIT, MICHIGAN

1964-65 Payroll

Supervisor	$ 8,000.00
Foreman	7,000.00
3 Repair Technicians @ $5,500.00 each	16,500.00
Secretary	4,500.00
Part-Time Technician Wages	3,500.00
	$39,500.00

1964-65 Operating Budget

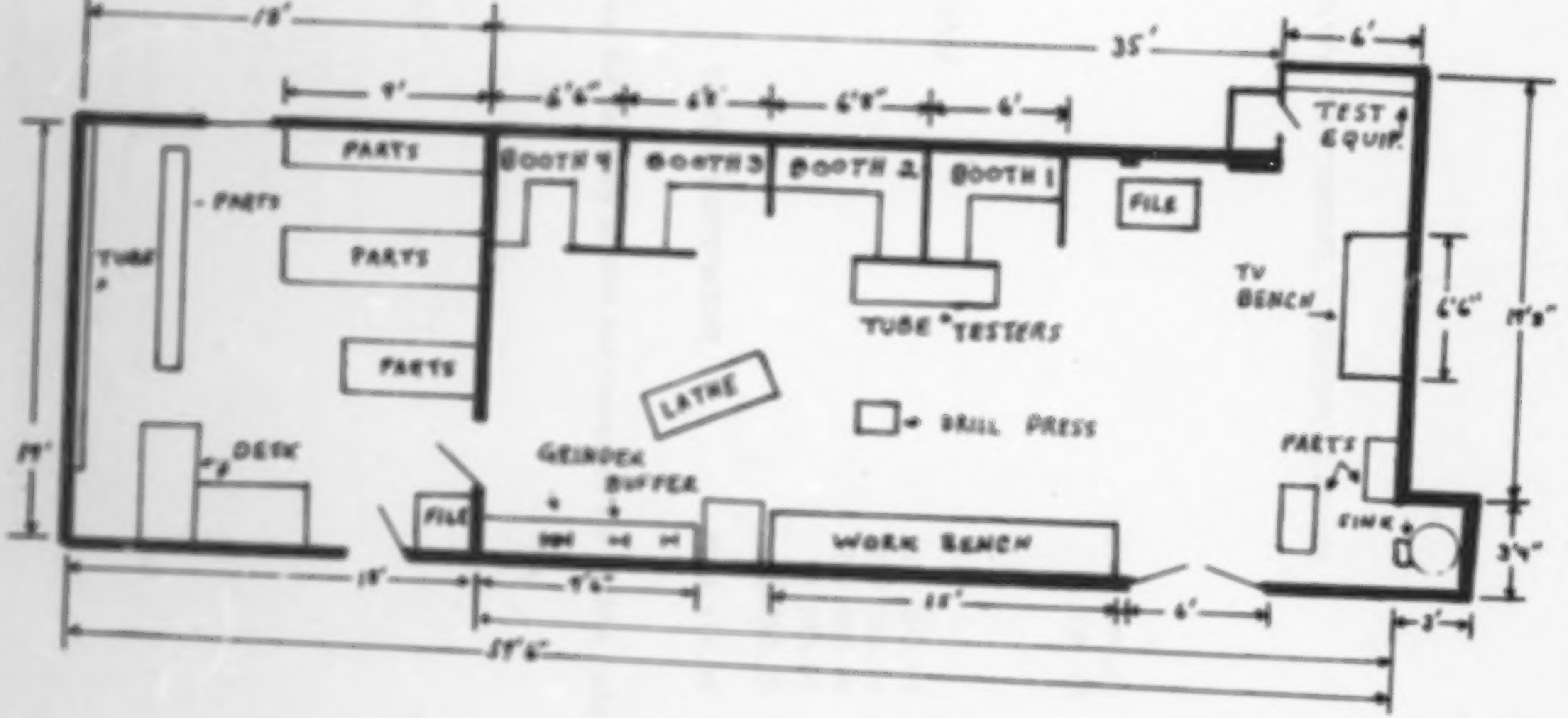
Salaries - Full-Time	$36,000.00
Salaries - Part-time	3,500.00
Parts, Supplies, Other Expenses	6,900.00
Equipment Additions and Replacements	2,400.00
	$ 48,800.00

Total Capital Outlay

Test Equipment, Power and Hand Tools	$ 8,400.00
Repair Carrels and Facilities	1,200.00
Tube Inventory	1,200.00
Parts Inventory	4,700.00
Parts Cabinets	2,300.00
Office Equipment	1,500.00
	$ 19,300.00

MAINTENANCE AND REPAIR UNIT, WAYNE STATE UNIVERSITY, DETROIT, MICH.

AUDIO VISUAL SHOP


18'
35'
6'
9'
6'6"
6'8"
6'8"
6'
PARTS
BOOTH 4
BOOTH 3
BOOTH 2
BOOTH 1
FILE
TEST & EQUIP.
PARTS
TUBE
PARTS
PARTS
TUBE TESTERS
TV BENCH
6'6"
17'8"
LATHE
DRILL PRESS
19'
DESK
GRINDER
BUFFER
FILE
WORK BENCH
PARTS
SINK
3'4"
18'
9'6"
15'
6'
3'
57'6"

BUREAU OF DATA PROCESSING, CHICAGO, ILLINOIS

CAPITAL OUTLAY	
Facilities Construction	$120,268.00
Equipment	14,540.00
LEASE EQUIPMENT (ANNUAL)	
IBM 7074 System	$171,048.00
IBM 1401 Systems (3)	118,752.00
REI Optical Reader	115,992.00
IBM 7770 System	51,878.00
EAM Equipment	75,948.00
TOTAL EQUIPMENT	$533,618.00

(Includes equipment scheduled for delivery in 1965 and therefore not in 1964 budget)

BUREAU OF DATA PROCESSING, CHICAGO, ILLINOIS (cont'd.)

POSITION	SALARY
GENERAL OFFICE:	
Director IV	$17,700.00
Data Processing Systems Analyst IV	10,008.00
Head Stenographer	7,284.00
Senior Typist	4,836.00
Data Control Coder	4,596.00
Junior Stenographer	3,792.00
Junior Clerk	3,792.00
Typist	3,600.00
Automatic Increase	452.00
Office Supplies	9,500.00
Professional Services	31,000.00
Carfare	1,000.00
Auto Reimbursement	480.00
Equipment	550.00
	$98,590.00
RESEARCH AND DEVELOPMENT:	
Assistant Director I	12,240.00
Programmer II	7,848.00
Programmer I	7,104.00
	$27,192.00
DATA PROCESSING EDUCATION:	
Supervisor of Data Processing Education	9,120.00
Teacher	8,220.00
Automatic Increase	400.00
Graphic Artist II	6,760.00
	$24,500.00
SYSTEMS AND PROCEDURES:	
Manager of Systems	11,040.00
Data Processing Systems Analyst III	11,040.00
Data Processing Systems Analyst II	10,008.00
DataProcessing Systems Analyst III	10,000.00
Data Processing Systems Analyst II (2)	19,056.00
Data Processing Systems Analyst III (2)	19,056.00
Data Processing Systems Analyst III	9,072.00
Data Processing Systems Analyst II	9,652.00
Data Processing Systems Analyst I (2)	16,464.00
Data Processing Systems Analyst II (2)	16,464.00
Data Processing Systems Analyst I	7,848.00
Data Processing Systems Analyst I	7,464.00
Data Processing Systems Analyst Trainee	7,464.00
Data Processing Systems Analyst Trainee	7,104.00
Data Processing Systems Analyst Trainee	6,760.00
Automatic Increase	1,343.00

BUREAU OF DATA PROCESSING, CHICAGO, ILLINOIS (cont'd.)

SYSTEMS AND PROCEDURES (cont'd.):

Extended Day	9,000.00
Scanner Test Forms	8,500.00
Printing	5,000.00
Carfare	3,000.00
Equipment	2,200.00
	$196,451.00

PROGRAMMING:

Programmer III	9,972.00
Programmer II	8,232.00
Programmer II (3)	22,392.00
Programmer I (3)	21,312.00
Programmer I (2)	13,536.00
Programmer Trainee	5,328.00
Programmer Trainee	5,064.00
Data Control Coder	4,836.00
Automatic Increase	1,628.00
Extended Day	9,000.00
Equipment	690.00
	$101,000.00

OPERATIONS:

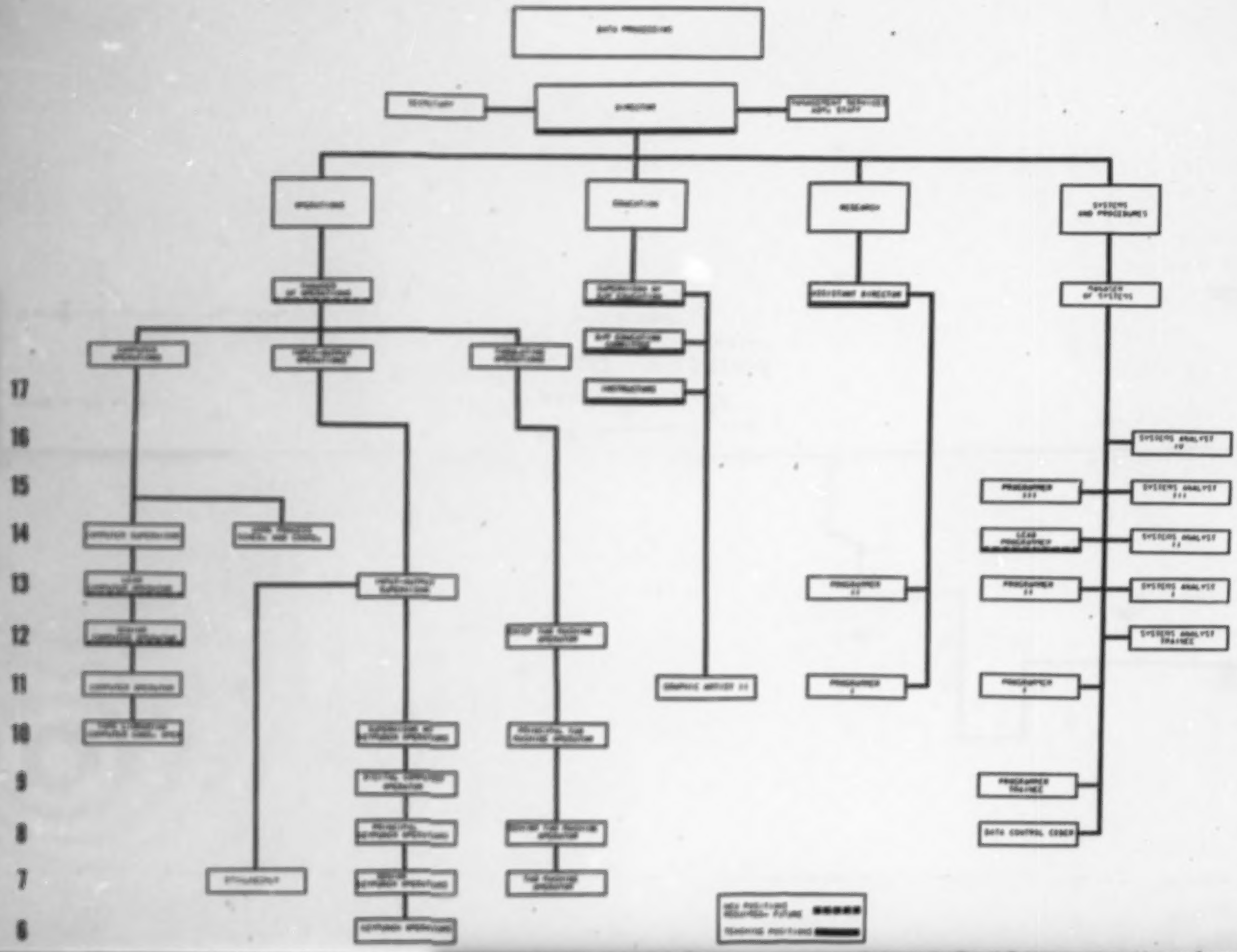
Manager of Operations	10,512.00
Data Processing Systems Analyst II	9,072.00
Automatic Increase	328.00
Extended Day	3,600.00
Supplies	40,000.00
Rental of Office Devices	409,390.00
Meals	5,000.00
Freight -- Cartage	2,500.00
Equipment	660.00
	$481,062.00

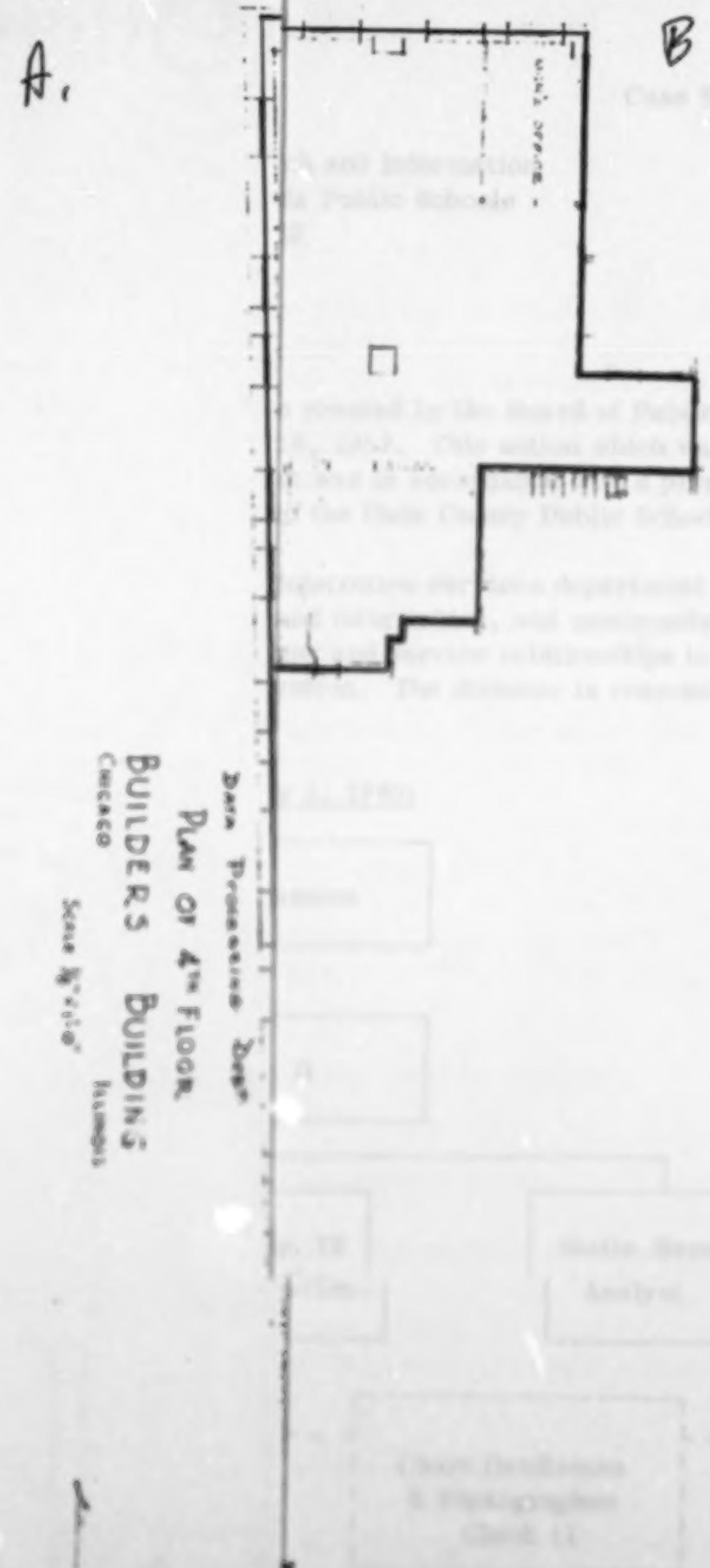
COMPUTER OPERATIONS:

Computer Supervisor	9,528.00
Principal Tabulating Machine Operator	7,650.00
Computer Console Operator	7,650.00
Chief Computer Console Operator	7,464.00
Computer Console Operator	6,768.00
Senior Computer Console Operator (2)	12,312.00
Computer Console Operator	5,580.00
Senior Tabulating Machine Operator	4,836.00
Automatic Increase	524.00
Extended Day	5,000.00
	$67,312.00

BUREAU OF DATA PROCESSING, CHICAGO, ILLINOIS (cont'd.)

UNIT RECORD OPERATIONS:	
Supervisor of Data Conversion	8,232.00
Supervisor of Key Punch	7,650.00
Programmer Trainee	6,300.00
Principal Key Punch Operator	5,328.00
Senior Key Punch Operator	5,064.00
Principal Key Punch Operator	5,064.00
Senior Key Punch Operator (2)	9,672.00
Key Punch Operator (2)	9,420.00
Senior Key Punch Operator	4,710.00
Key Punch Operator	4,392.00
Storekeeper (2)	8,328.00
Key Punch Operator (2)	7,944.00
Key Punch Operator (4)	15,168.00
Automatic Increase	860.00
Extended Day	7,000.00
	$105,132.00
TABULATING MACHINE OPERATIONS:	
Principal Tabulating Machine Operator (2)	15,300.00
Chief Tabulating Machine Operator	7,104.00
Senior Tabulating Machine Operator	6,300.00
Senior Tabulating Machine Operator	5,718.00
Senior Tabulating Machine Operator	5,580.00
Automatic Increase	2,030.00
Extended Day	2,000.00
	$ 44,032.00
TOTAL BUREAU OF DATA PROCESSING	**$1,145,369.00**


DATA PROCESSING
SECRETARY
DIRECTOR
MANAGEMENT SERVICES ADPS STAFF
OPERATIONS
EDUCATION
RESEARCH
SYSTEMS AND PROCEDURES
MANAGER OF OPERATIONS
SUPERVISOR OF ADP EDUCATION
ADP EDUCATION ASSISTANT
INSTRUCTORS
ASSISTANT DIRECTOR
MANAGER OF SYSTEMS
COMPUTER OPERATIONS
INPUT-OUTPUT OPERATIONS
TABULATING OPERATIONS
17
16
15
14
13
12
11
10
9
8
7
6
SYSTEMS ANALYST IV
PROGRAMMER III
SYSTEMS ANALYST III
LEAD PROGRAMMER
SYSTEMS ANALYST II
PROGRAMMER II
SYSTEMS ANALYST I
SYSTEMS ANALYST TRAINEE
PROGRAMMER I
PROGRAMMER TRAINEE
DATA CONTROL CLERK
PROGRAMMER II
PROGRAMMER I
GRAPHIC ARTIST II
COMPUTER SUPERVISOR
LEAD COMPUTER OPERATOR
SENIOR COMPUTER OPERATOR
COMPUTER OPERATOR
INPUT-OUTPUT SUPERVISOR
STENOGRAPHER
SUPERVISOR OF KEYPUNCH OPERATIONS
PRINCIPAL KEYPUNCH OPERATOR
SENIOR KEYPUNCH OPERATOR
KEYPUNCH OPERATOR
CHIEF TAB MACHINE OPERATOR
PRINCIPAL TAB MACHINE OPERATOR
SENIOR TAB MACHINE OPERATOR
TAB MACHINE OPERATOR
NEW POSITIONS REQUIRED-FUTURE
EXISTING POSITIONS


A.
B
MEN'S ROOM
DATA PROCESSING DEPT
PLAN OF 4TH FLOOR
BUILDERS BUILDING
CHICAGO
ILLINOIS
SCALE 1/8"=1'0"
N. LA SALLE STREET

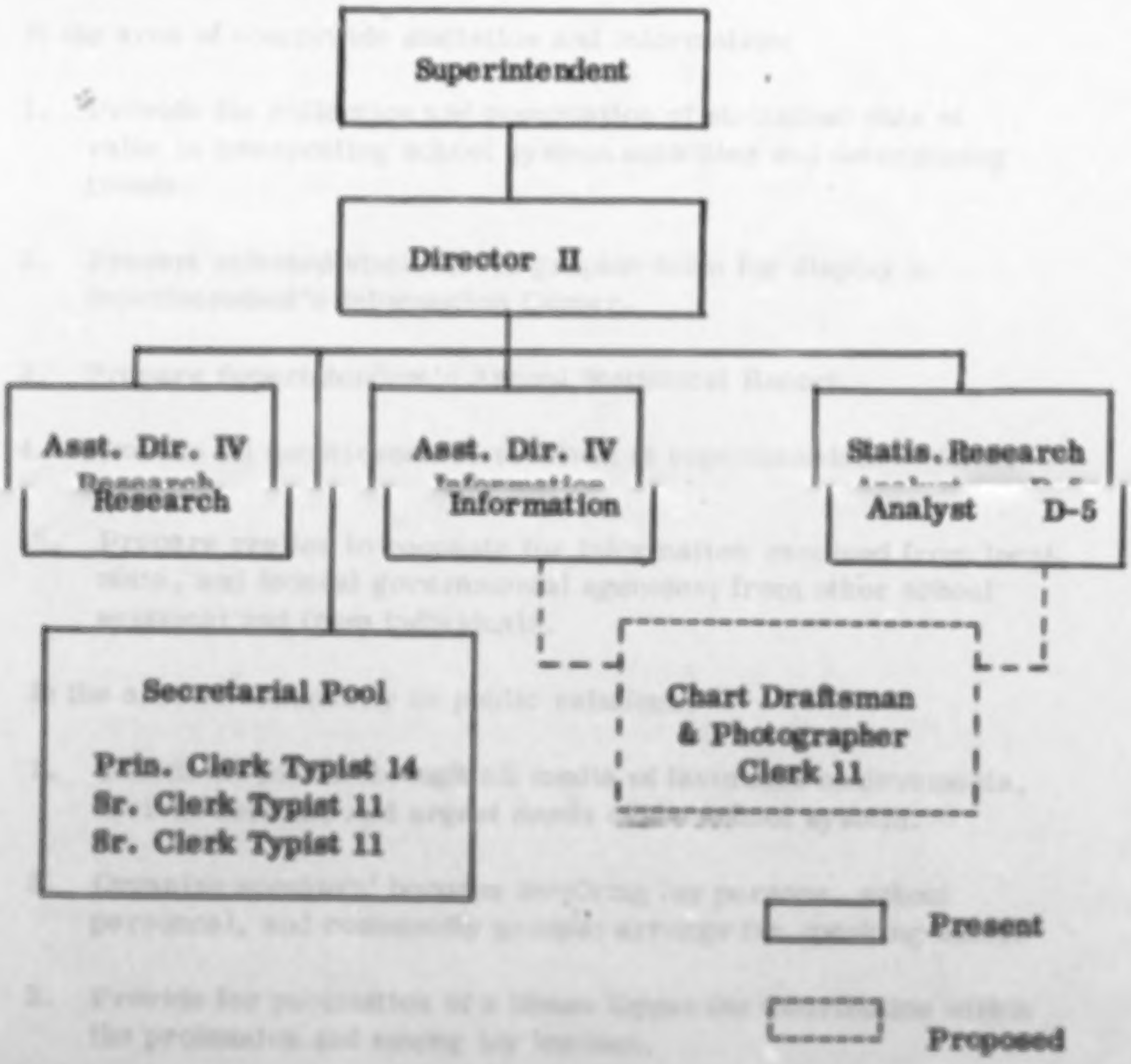
Department of Research and Information
Dade County, Florida Public Schools
July 1963

I. Background

The position of research director was created by the Board of Public Instruction at its official meeting of July 15, 1953. This action which was taken upon recommendation of the superintendent was in accordance with a proposal contained in the "Peabody Survey Report of the Dade County Public Schools."

This department functions as an administrative services department in the areas of research, countywide statistics and information, and community or public relations. It has cooperative working and service relationships to all other divisions and departments of the school system. The director is responsible to the superintendent.

II. Staff Organization and Personnel (July 1, 1963)


Superintendent
Director II
Asst. Dir. IV
Research
Asst. Dir. IV
Information
Statis. Research
Analyst D-5
Secretarial Pool
Prin. Clerk Typist 14
Sr. Clerk Typist 11
Sr. Clerk Typist 11
Chart Draftsman
& Photographer
Clerk 11
Present
Proposed

III. Functions of Department of Research and Information

A. In the area of research:

1. Initiate, carry out, and prepare formal or informal reports of studies which are of significance to the operation of the school system in administrative, instructional, and non-instructional areas. Typical examples are: pupil population projections; class size; dropouts; ETV evaluation; costs of salary schedule changes; school lunch procedures; high school interscholastic athletic programs.

2. Maintain current research reference materials covering all aspects of the school system for use of the department and administrative and supervisory personnel.

3. Maintain liaison and provide for exchange of information with other school systems, and with state and national groups involved in public school research work.

B. In the area of countywide statistics and information:

1. Provide for collection and compilation of statistical data of value in interpreting school system activities and determining trends.

2. Present selected statistics in graphic form for display in Superintendent's Information Center.

3. Prepare Superintendent's Annual Statistical Report.

4. Process all questionnaires received in superintendent's office.

5. Prepare replies to requests for information received from local, state, and federal governmental agencies; from other school systems; and from individuals.

C. In the area of community or public relations:

1. Inform the public through all media of favorable achievements, serious defects, and urgent needs of the school system.

2. Organize speakers' bureaus involving lay persons, school personnel, and community groups; arrange for speaking dates.

3. Provide for publication of a House Organ for distribution within the profession and among lay leaders.

4. Assist staff members in work with educational conventions held locally and with preparation of handbooks, recruiting leaflets, and similar materials for popular and staff consumption.

5. Serve as consultant to superintendent, members of Board of Public Instruction, and staff members in public relations matters relating to the schools.

IV. Duties and responsibilities of personnel in Department of Research and Information

A. Director

Responsible to the Superintendent for implementing the research, statistics and information, and community relations functions for the school system.

1. Plans and directs the work of the department.
2. Initiates new research projects and provides for completion of projects requested by the Superintendent.
3. Advises and assists other staff members in planning and conducting their own research projects.
4. Plans for production and display of materials in Superintendent's Information Center.
5. Provides for dissemination of research findings.
6. Promotes cooperative relationships with other research agencies - local, state, and national.
7. Participates in state and national meetings of value to the school system.
8. Prepares annual budget for the department.
9. Serves as permanent secretary to Superintendent's Professional Advisory Council.
10. Serves as administration representative for Florida Congress of Parents and Teachers (State Board of Managers - School Education Chairman).

B. Assistant Director - Research

Responsible to director for carrying out research function.

1. Prepares special reports and research studies as requested by director.
2. Completes questionnaires and replies to other requests for information - conducts necessary research involved.

3. Prepares annual studies - salary schedule; mathematics-science-foreign language enrollments; pupil population projection; etc.

4. Prepares statistical analysis of test results of Educational Television program.

5. Completes annual revision of Administrative and Supervisory Organizational Chart and Manual of Duties and Responsibilities of Administrative and Supervisory Personnel.

6. Maintains and revises annually the Index for Administrators' Handbook.

7. Plans for and conducts the countywide "Pupil Dropout Study" and prepares reports of findings thereof.

8. Arranges for and conducts meetings of school personnel, to explain procedures involved in research projects involving the schools (examples: Federally-connected Pupil Surveys; Dropout Study).

9. Assists other departments in preparation of information materials.

10. Represents school system on local research groups such as the Welfare Planning Council Research Committee and the Community Research Panel.

11. Assumes responsibility for operation of the department in director's absence.

C. Assistant Director - Information

Responsible to director for carrying out community relations function.

1. Prepares school system House Organ for distribution to staff personnel and community leaders.

2. Maintains personal contact with news media; contributes releases and other information.

3. Organizes speakers' bureaus and arranges for speaking dates with community groups; provides information for personnel from school system to use in addressing civic and other groups.

4. Assists staff members in work with educational conventions and in preparation of leaflets, displays, etc. for staff and popular consumption.

5. Provides for periodic reports to the public and conducts community surveys, as requested.

6. Assists in coordinating projects involving civic groups, businesses, and industry, such as Science Fair, Art Exhibits, etc.

7. Serves as consultant to members of Board of Public Instruction, superintendent, and other staff members in public relations matters relating to the schools.

8. Maintains liaison with state and national groups in area of school public relations.

D. Statistical Research Analyst

Responsible to director for countywide statistics, annual reports, and graphic presentations.

1. Collects, tabulates, and prepares reports of statistical data concerning all major activities of school system.

2. Checks data for accuracy and consistency and reports discrepancies to appropriate department.

3. Prepares regularly recurring reports such as class size; per pupil cost; report to State Department on teachers, housing, and enrollment; statistical reports to state and federal government agencies.

4. Prepares tables and charts for Superintendent's Annual Statistical Report.

5. Assists other departments in preparation of tabular and graphic materials, maps, etc.

6. Maintains wall map showing location of all school centers.

7. Prepares and maintains charts and other materials displayed in Superintendent's Information Center.

8. Replies to requests for statistical information from individuals; other school systems; local, state, and federal government agencies.

9. Prepares cost estimates of salary schedule changes.

10. Maintains files of statistical information.

E. Principal Clerk Typist (1)
Senior Clerk Typist (2)

These three persons operate as a clerk-typist pool responsible to director for stenographic and clerical duties involved in operation of the department.

1. Prepare all materials for mimeograph and/or offset reproduction.

2. Maintain general files and special files (dropouts, research reference materials, questionnaire replies, extra copies of studies, directories, etc.)

3. Maintain distribution lists, research exchange mailings, news media lists, etc.

4. Maintain storage and supplies.

5. Prepare requisitions; forms for personnel.

6. Direct visitors and telephone calls to appropriate person in department or elsewhere in central offices.

7. Maintain newspaper clipping files and display.

8. Maintain record of incoming questionnaires and disposition.

9. Prepare simple data tabulations; replies to requests for information; compose simple correspondence.

TELEVISION STATION WMSB, MICHIGAN STATE UNIVERSITY
EAST LANSING, MICHIGAN

WMSB is the television broadcast service of Michigan State University, operating on channel 10 from studios in East Lansing, with transmitter at Onondaga. Primary funds for the operation of the station are allocated to WMSB from the University general funds provided by the Legislature of the State of Michigan. A small portion of the annual operating budget is derived from production contracts with other organizations.

The license for WMSB is held by the Board of Trustees, Michigan State University. Top administrative responsibility for the television broadcasting service is in the office of the President, specifically charged to the Assistant to the President who is also Director of University Relations. A Director of Broadcasting over all radio and television broadcasting by the University reports to the Director of University Relations. The Station Manager of WMSB is responsible to the Director of Broadcasting.

The administrative staff of WMSB includes the Station Manager, Program Manager, Production and Facilities Manager, and Chief Engineer. All policy decisions regarding station operation are made by this group, with provision for review at higher levels.

The full-time professional staff of WMSB includes fifty-three persons as follows:

Station Manager
Program Manager
Production and Facilities Manager
Chief Engineer
Director of Promotion and Public Relations
Traffic & Continuity Supervisor
Coordinator of In-School programs
Assistant to Production & Facilities Manager
Program Associate in Fine Arts
4 Producers
3 Producers-Directors
3 Directors
Assistant Chief Engineer
2 Engineering Supervisors
11 Engineers
Film Supervisor
Film Cameraman
Film Editor
6 Television Cameramen
2 Studio Supervisors
Floor Director
Art and Design Supervisor
Art and Design Assistant
Chief Announcer
5 Secretarial

Administrative and supervisory personnel are college graduates, several with higher degrees. A bachelor's degree is required for a position on the programming and production staffs. About one-half of the full-time professional staff members are graduates of the radio-TV training program at Michigan State University. Salaries for the staff are comparable with commercial television stations in the area, although the salaries of administrative people tend to be lower.

A very small number of the WMSB staff are on the faculty of the University. A dozen others are listed as administrative-professional employees. The bulk of the staff is listed as classified staff.

The full-time staff is complemented by a varying number of part-time, paid students and people from the community. During the period September through June, this group averages thirty in number, working an average of ten hours per week in the areas of traffic and continuity, secretarial, studio supervision (staging, lighting, floor directing), performers, promotion, announcing, switchboard, engineering, film, and program production.

An apprenticeship program is also operated which utilizes the services of student volunteers. All university students, with the exception of first term Freshmen, are eligible to participate in this program. Their area of work is the same as those listed above for paid personnel. After completion of the apprenticeship program, the students are placed on the paid part-time staff, if they are capable, needed and funds are available.

Students of the University have an opportunity to work in nearly all phases of WMSB, excepting administration, producing, and directing, although students do work as assistants to producers and directors. Advanced and graduate students work as unit or segment producers on some programs.

Physical Plant and Facilities

WMSB is one of the best equipped educational television stations in the country. The main studio building is a complex of joined quonset huts which was constructed during World War II. The interior of the building was completely renovated prior to the advent of WKAR-TV in 1954. The building has undergone constant revisions since that time. Five adjacent quonset buildings are also utilized for office and storage purposes. Another adjacent quonset is utilized as a scenery construction shop, complete with power tools.

The broadcast and auxiliary equipment within the studio building includes the following:

Three television studios: two are 35' by 45'; one is 16' by 20'
One small sound studio
Six studio image orthicon camera chains (five RCA, one GPL)
Three pedestal dollies (Houston)
Two film and slide camera chains (RCA)
Two 16mm film projectors (RCA)
Two Telejector slide projectors
Two Ampex videotape recorders (one VR1001A and one VR1000B)
One GPL kinescope recorder
Two Ampex 601 audio tape recorders

Six phono turntables (four RCA; two Presto)
Two Kliegl lighting boards
Three studio audio consoles (two RCA; one Gates)
Twenty microphones of various types
Two Mole Richardson microphone booms
Three film cameras (Bell and Howell silent; two Auricon sound)
Darkroom equipped for still and motion picture processing
Three microwave systems (two remote units, RCA and Raytheon;
one studio-transmitter link, GE)
AP teletype newswire service
Mobile unit; Flexible bus with two field camera chains (RCA)
Mobile videotape van; Specially designed to house VR1001A
"Econoline" bus

Transmitter

The allocation of channel 10 to Onondaga, Michigan, rather than a large city was a technical necessity. Stations operating on the same channel must be separated by 160 miles in order not to interfere with each other. A small triangular area near Onondaga was selected for the allocation by the Federal Communications Commission because it is 160 miles distant from other channel 10 transmitters in Milwaukee, Terre Haute and London, Ontario.

The transmitter building houses, in addition to the transmitter, a studio, control room facilities, an announcing booth, engineering repair shop, kitchen, and sleeping room.

The broadcasting tower adjacent to the transmitter building is 983 feet high. The transmitter and antenna were manufactured by GE. The transmitter operates at maximum allowed power with 309 kilowatts of visual power, and 174 kilowatts of aural power.

BUDGET

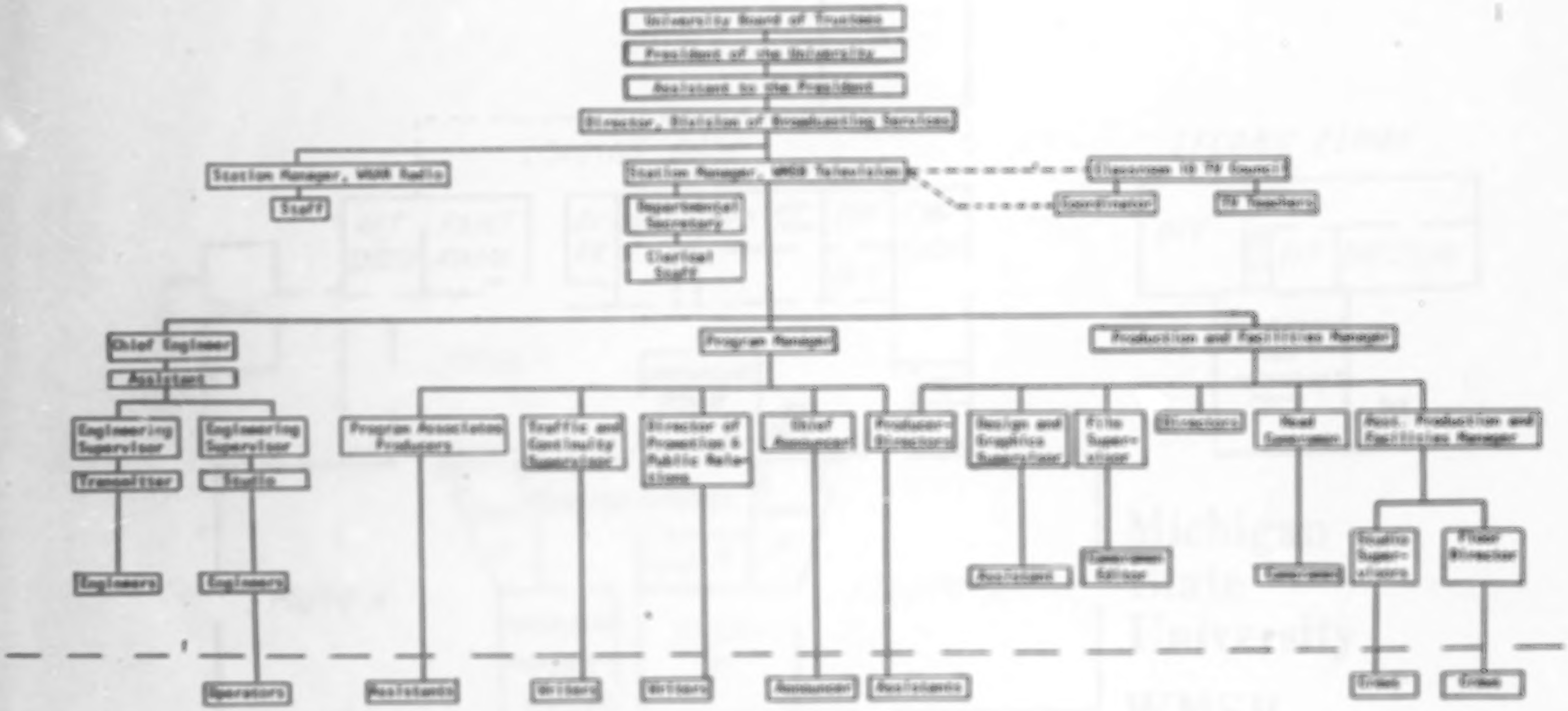
Annual operating budget covering salaries and all operating costs: $380,000.00.

CAPITAL OUTLAY

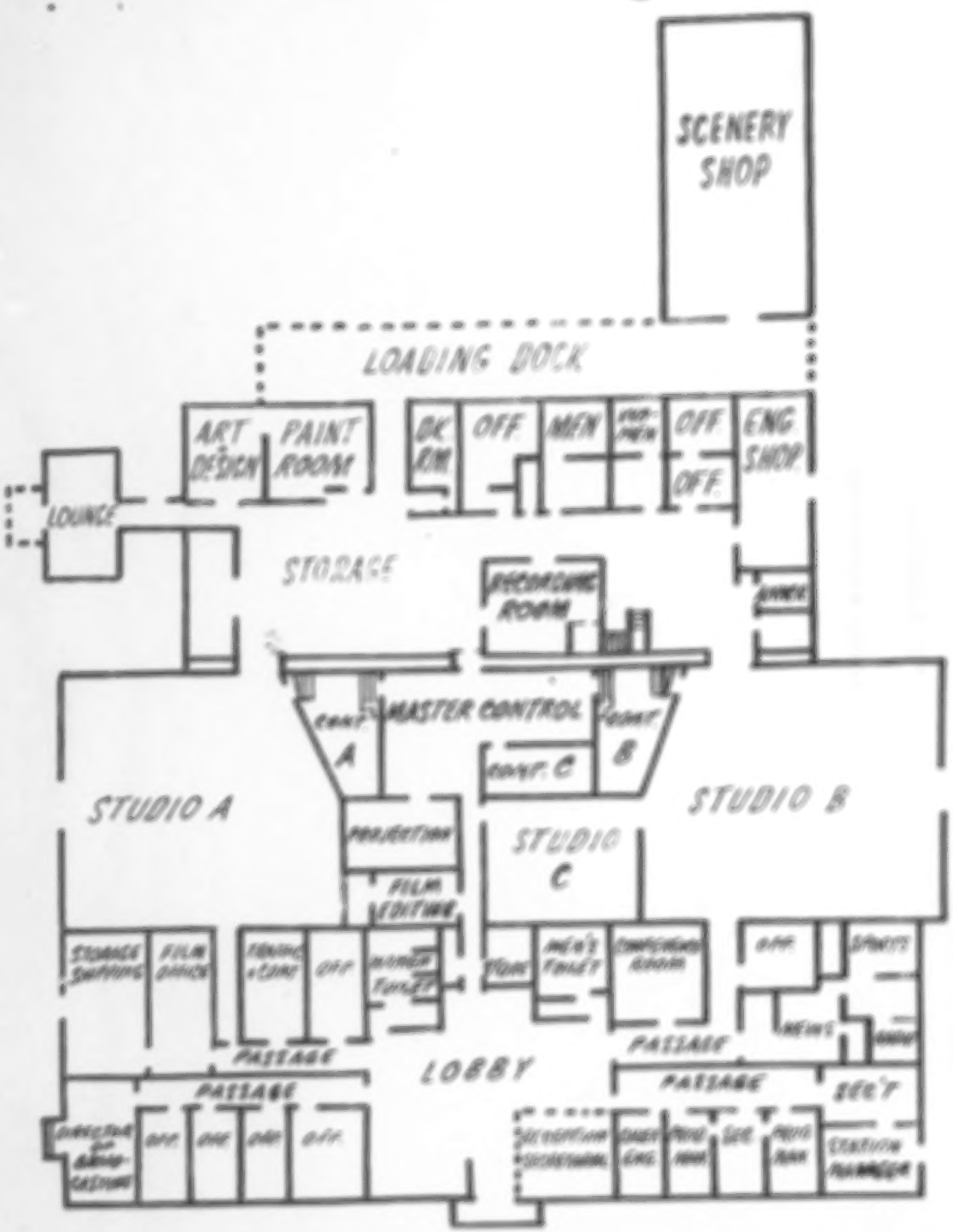
$ 1,030,000.00

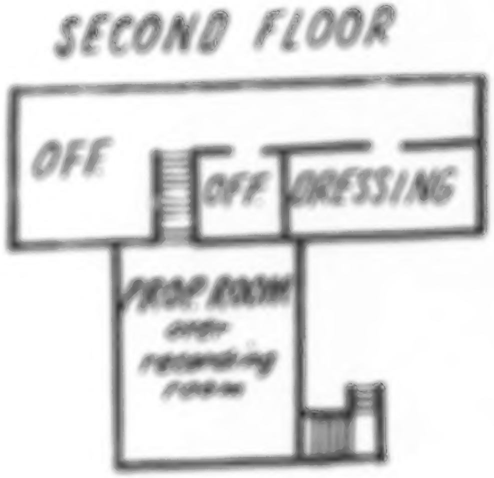
Michigan State University

ORGANIZATION CHART - WMSB


University Board of Trustees
President of the University
Assistant to the President
Director, Division of Broadcasting Services
Station Manager, WKAR Radio
Staff
Station Manager, WMSB Television
Departmental Secretary
Clerical Staff
Classroom TV Council
Coordinator
TV Teachers
Chief Engineer
Assistant
Engineering Supervisor
Transmitter
Engineering Supervisor
Studio
Engineers
Engineers
Operators
Program Manager
Program Associates Producers
Traffic and Continuity Supervisor
Director of Promotion & Public Relations
Chief Announcer
Producer-Directors
Production and Facilities Manager
Design and Graphics Supervisor
Film Supervisor
Directors
Head Cameraman
Asst. Production and Facilities Manager
Studio Supervisors
Floor Director
Assistants
Writers
Writers
Announcers
Assistants
Assistants
Cameraman Editor
Cameramen
Crews
Crews

Positions above broken line are fulltime staff
Positions below broken line are parttime students


SCENERY SHOP
LOADING DOCK
LOUNGE
ART DESIGN
PAINT ROOM
DK. RM.
OFF.
MEN
WOMEN
OFF.
OFF.
ENG. SHOP
STORAGE
RECORDING ROOM
MASTER CONTROL
CONT. A
CONT. B
CONT. C
STUDIO A
STUDIO B
STUDIO C
PROJECTION
FILM EDITING
STORAGE SHIPPING
FILM OFFICE
FILING & CONF
OFF.
WOMEN'S TOILET
MEN'S TOILET
CONFERENCE ROOM
OFF.
SPORTS
NEWS
PASSAGE
PASSAGE
LOBBY
PASSAGE
PASSAGE
SEC'Y
DIRECTOR OF BROADCASTING
OFF.
OFF.
OFF.
OFF.
RECEPTION SWITCHBOARD
CHIEF ENG.
PROG. MGR.
SEC.
PROD. MGR.
STATION MANAGER


SECOND FLOOR
OFF.
OFF.
DRESSING
PROP ROOM
over
recording
room

Michigan State University

WMSB Television Studios

APPENDIX "D"

INTERVIEW GUIDE

How is information disseminated by your department?

Advantages and problems?

Recommended changes?

A floor plan will be made of the present facilities plus recommendation that the personnel may have for making changes, including square footage.

Inventory of equipment cost --

What do you have?

What would you like to have?

Reasons --

Operating costs --

Department Directors:

(Directors of the following departments -- where they existed -- were interviewed: Curriculum; Research; Psychological and guidance services; Architects and buildings and grounds; Communications - AV, TV, etc.; Administration, data processing, cooperative purchasing; Continuity education and adult education; Library service; and Materials and equipment)

Number of professional staff members in your department?

Number of non-professional staff?

Background of the professional staff?

Background of the nonprofessional staff?

Cost of professional staff?

Cost of non-professional staff?

Job specifications of professional staff?

Job specifications of non-professional staff?

Changes you would recommend in staffing patterns and duties?

Actual duties performed?

Types of things you would like to accomplish?

Problems preventing this from happening?

Some of your strongest services?

Some of the weak ones?

Facilities you have?

Facilities you would like to have?

Capital investment?

Operating expenditures?

How a budget is drawn -- and funds are obtained -- for your department?

INTERVIEW INSTRUMENT
for
COOPERATIVE PURPOSES

CITY SYSTEM

Population of City	________	Number of Elementary Schools	________
Number of Students	________	Number of Junior High Schools	________
Number of Teachers	________	Number of High Schools	________

Total Budget: $____________

COUNTY SYSTEM

Number of Districts	________	Number of Elementary Schools	________
Number of Students	________	Number of Junior High Schools	________
Number of Teachers	________	Number of High Schools	________

Total Budget: $____________

SUPERINTENDENT:

What departments do you have in your central offices that service both professional and non-professional people?

What facilities do they have to render these services?

How are these services financed?

What are the benefits of these services?

What are the problems?

What ideal services would you like to have?

What departments do you feel are outstanding in their programs and why?

What departments do you feel need improvement?

Department Directors:

(Directors of the following departments -- where they existed -- were interviewed: Curriculum; Research; Psychological and guidance services; Architects and buildings and grounds; Communications - AV, TV, etc.; Administration, data processing, cooperative purchasing; Continuity education and adult education; Library service; and Materials and equipment)

Number of professional staff members in your department?

Number of non-professional staff?

Background of the professional staff?

Background of the nonprofessional staff?

Cost of professional staff?

Cost of non-professional staff?

Job specifications of professional staff?

Job specifications of non-professional staff?

Changes you would recommend in staffing patterns and duties?

Actual duties performed?

Types of things you would like to accomplish?

Problems preventing this from happening?

Some of your strongest services?

Some of the weak ones?

Facilities you have?

Facilities you would like to have?

Capital investment?

Operating expenditures?

How a budget is drawn -- and funds are obtained -- for your department?